

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Review of the Commission's Rules Regarding	)	
the Pricing of Unbundled Network Element )		WC Docket No. 03-173
and the Resale of Service by Incumbent Local	)	
Exchange Carriers	)	

**REPLY COMMENTS OF MCI**

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January 30, 2004

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ATTACHMENTS:

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<i>VA Arb. Order</i>	<i>In re Petition of WorldCom, Inc. and AT&amp;T Communications of Virginia, Inc., Pursuant to Section 252(e)(5) of the Communications Act for Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes With Verizon Virginia Inc., and for Expedited Arbitration</i> , 18 F.C.C.R. 17722 (2003)
<b>Declarations and Affidavits</b>	
Ankum Decl.	Declaration of August H. Ankum on Behalf of MCI (Attachment B to Comments of MCI, WC Docket No. 03-173 (filed Dec. 16, 2003))
Gabel/Loube Decl.	Declaration of David J. Gabel & Robert Loube on Behalf of NASUCA (Attachment to Comments of NASUCA, WC Docket No. 03-173 (filed Dec. 16, 2003))

Lacey Decl.	Declaration of John M. Lacey on Behalf of Verizon (Exhibit 4 to Comments of Verizon, WC Docket No. 03-173 (filed Dec. 16, 2003))
Lee Decl.	Declaration of Richard B. Lee on Behalf of AT&T Corp. (Attachment to Comments of AT&T Corp., WC Docket No. 03-173 (filed Dec. 16, 2003))
Majoros Decl.	Declaration of Michael J. Majoros, Jr. on Behalf of MCI (Attachment D to Comments of MCI, WC Docket No. 03-173 (filed Dec. 16, 2003))
NERA Decl.	Declaration of NERA Economic Consulting on Behalf of BellSouth (Exhibit 3 to Comments of BellSouth, WC Docket No. 03-173 (filed Dec. 16, 2003))
Pelcovits Reply Decl.	Reply Declaration of Michael D. Pelcovits on Behalf of MCI (Attached hereto)
Riolo Decl.	Declaration of Joseph P. Riolo on Behalf of AT&T Corp. (Attachment to Comments of AT&T Corp., WC Docket No. 03-173 (filed Dec. 16, 2003))
Shelanski Decl.	Declaration of Howard Shelanski on Behalf of Verizon (Exhibit 1 to Comments of Verizon, WC Docket No. 03-173 (filed Dec. 16, 2003))
Willig Decl.	Declaration of Robert D. Willig on Behalf of AT&T Corp. (Attachment to Comments of AT&T Corp., WC Docket No. 03-173 (filed Dec. 16, 2003))
<b>Other Materials</b>	
Kahn, <i>The Economics of Regulation</i>	Alfred E. Kahn, <i>The Economics of Regulation Principles of Institutions</i> (1988)

## REPLY COMMENTS OF MCI

MCI submits these reply comments pursuant to the Commission's September 15, 2003, Notice of Proposed Rulemaking in the above-captioned matter.

### INTRODUCTION AND SUMMARY OF ARGUMENT

Most commenters agree with MCI that the current TELRIC rules have proven to offer a sound basis for the states to set network element prices, and that there is no need to provide the states substantially different or additional guidance in setting rates.<sup>1</sup> In particular, the states themselves, who have the most informed views on the question, have not agreed that TELRIC is in need of radical, top-down reform, and, indeed, have recognized the potential disruptiveness of excessive change.<sup>2</sup> Only the incumbents take a contrary view, but in the words of their principal witness, their pleadings are just the “wearily predictable protestations of company witnesses and lawyers that any regulation will immediately dam up the flow of capital into the industry and thereby bring down on the commissioners’ heads the wrath of the consuming public, Congress, and the courts.”<sup>3</sup> Their arguments mischaracterize TELRIC and are not theoretically sound; their empirical claims are counterfactual; and they fail to acknowledge the changed circumstances within which pricing rules will operate after the recent *Triennial Review Order*. Moreover, the FCC previously found not that TELRIC was perfect, but that it was better than any proposed alternative, and that remains as true today as it was seven years ago. The alternatives proposed by the ILECs are worse in every way than TELRIC – they are at once analytically incoherent and

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<sup>1</sup> See, e.g., Comments of the National Association of State Consumer Advocates, 4-6; Comments of the National Association of Regulatory Utility Commissioners, at 1; Comments of the New Jersey Division of Ratepayer Advocate, at 5-8; Comments of the Illinois Commerce Commission (“ICC Comments”), at 9-11.

<sup>2</sup> See, e.g., ICC Comments at 9-11, 13; Comments of the Pennsylvania Public Utilities Commission, 3-4.

<sup>3</sup> II Kahn, *The Economics of Regulation* 12.

far more complex and unreliable than TELRIC. The same is true with respect to their proposals regarding particular inputs.

## **I. ILEC CRITICISMS OF TELRIC ARE BASELESS**

There is uniform agreement that a pricing model has to be both theoretically sound and practical to use. While the ILEC commenters claim that TELRIC is neither, the overwhelming weight of the argument and evidence submitted in the opening comments establishes that it is both.

### **A. The Theoretical Foundations of TELRIC Are Sound.**

The ILECs' arguments are based on little more than the truism that their actual networks are more complex than the TELRIC model. *E.g.*, SBC Comments at 11; Verizon Comments at 1. Of course they are. The TELRIC model is just that – a model – and it is a model designed to *value* the ILECs' networks, not to replicate them in all of their detail. Specifically, it does not purport to identify particular equipment (or mixes of equipment) that the ILECs' actual networks deploy, or the pace at which the networks evolve. TELRIC does not make the ridiculous assumption of “immediate and ubiquitous deployment of the latest technology,” by carriers that have already sunk costs in prior technology. Criticizing TELRIC for not doing things it does not purport to do is besides the point.

The relevant question is how well TELRIC does what it is supposed to do – value the ILECs' networks. On that point, the ILECs have remarkably little of substance to say. They cannot and do not dispute the basic premise upon which TELRIC is constructed – that the accurate way to value the network is to measure the forward-looking cost of providing the wholesale functions their actual networks provide.

What the ILECs say, *ad nauseum*, is that since forward-looking cost models by definition model the most-efficient currently available technology, and not the embedded network, they accurately value only such a “perfect” network, and not “real world” networks. But since the ILECs cannot and do not dispute the general point that real-world equipment, no matter its vintage, is properly valued by the cost of the most up-to-date equipment available on the market performing the same functions, on inspection this criticism collapses into nothing more than the irrelevant claim that their networks are more complicated than the TELRIC model. If the ILECs wish to mount a challenge to the proposition that their network should be valued at its long-run forward looking cost, or that, in Alfred Kahn’s words, that cost should be calculated by modeling “the average total cost of a new plant, using new technology,” I Kahn, *The Economics of Regulation* 113, they should do so. The most notable thing about their comments is that they do not mount such a challenge.

The closest the ILECs come to an argument is their assertion (for it is little more than that) that the value of their networks decline over time and so is necessarily less efficiently designed than a hypothetical perfectly efficient network. Consequently, they claim that a long-run forward-looking cost model such as TELRIC inherently understates costs. That claim is false. There is no evidence that the value of the ILEC network has declined over time. And even if it did decline in value (or will otherwise always develop inefficiencies over time due to the unpredictable nature of the enterprise), it never makes economic sense to value something based on what it cost to build it when it was built, or based on the equipment used to build it when it was built. Wherever it is appropriate, a forward-looking model addresses issues of declining value through input values such as accelerated depreciation. But it is wrong to say that



long-run forward-looking pricing inherently undervalues such a network, or that TELRIC as it has been applied has undervalued the ILECs' networks.

**1. TELRIC is Not Based on Mutually Exclusive Premises.**

The ILECs' wrongly claim that TELRIC assumes an impossibly efficient network because it is based on "conflicting assumptions." BellSouth Comments at 11. On the one hand, the ILECs argue, TELRIC makes the real-world assumption that the ILECs own a monopoly or near-monopoly network, with substantial attendant cost advantages in economies of scale, first-mover advantages, and access to capital. On the other hand, the ILECs claim, TELRIC sets rates as if the market were perfectly competitive, even though in a competitive environment the ILECs would have few of the benefits that their actual monopoly position provides. Thus, the ILECs assert, TELRIC provides a kind of "heads you win, tails I lose" scenario for them. *See, e.g.*, SBC Comments at 17-20; BellSouth Comments at 11. The choice, the ILECs insist, is to pick one or the other: 1) accept TELRIC's competitive assumption but do not include the scale and other economies the real world affords the ILECs; or 2) model real-world scale economies but reject the efficiency and contestability assumptions that are at the core of TELRIC. In fact, as we will show in what follows, the ILEC proposals do not choose one over the other but instead choose both—they fail to account for scale economies the ILECs obtain in the real world,<sup>4</sup> and at

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<sup>4</sup> *See, e.g.*, SBC Comments at 60 ("the Commission should clarify that UNE prices should be based on placement costs from recent ILEC contracts" and not on prices that reflect scale economies of constructing entire network); Qwest Comments at 33 (rates should not reflect actual structural sharing opportunities reflected in its network); BellSouth Comments at 11 (rates should reflect low utilization that would occur if a monopoly network were built and had to compete for traffic with other hypothetical facilities-based carriers); Verizon Comments at 36 ("Recent purchasing experience is the best evidence of how much it would currently cost to purchase and deploy the existing facilities in the ILEC's network.").

others they reject valuation assumptions that would apply in a competitive market.<sup>5</sup> But even if the ILECs made the choice they advocate, it would be a Hobson's choice.

If either of the ILECs' alternatives were accepted, the rates would be far above the ILECs' forward-looking costs. In a fully competitive market, the market itself sets rates at an optimally efficient level – producers seeking to maximize their profits will produce the maximum output of goods at the lowest price consistent with producers being able to recover their incremental and fixed costs. Rates will therefore approach the forward-looking cost of producing the desired service. In such a market there is no need for price regulation. In imperfectly competitive markets, however, producers seeking to maximize their profits will produce fewer goods at higher prices. This harms consumers and the economy. It also permits price squeezes that inhibit more efficient competition in downstream markets that are dependent upon upstream monopoly inputs, and so indirectly harms consumers in the same way – by leading to fewer goods and services at higher prices. Pelcovits Decl. at 3. Thus, for example, if the ILECs are able to charge above-cost rates for their loops, this can limit competition in downstream markets such as DSL or long-distance.

The very point of price regulation is to impose efficient pricing on producers when the market is not competitive and so does not automatically lead producers to charge efficient prices.<sup>6</sup> That price should reflect to the greatest extent possible the producer's forward-looking costs. Regulation thus artificially sets rates at a level that would pertain making the counter-

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<sup>5</sup> For example, all of the ILECs propose that structure sharing opportunities be evaluated based on those that exist for them, not those that would exist in a market with multiple competitors investing in facilities.

<sup>6</sup> I Kahn, *The Economics of Regulation* 17 (“the single most widely accepted rule for the governance of the regulated industries is regulate them in such a way as to produce the same results as would be produced by effective competition, if it were feasible.”).

factual assumption that the monopoly producer's ability to act inefficiently was being constrained by the operation of a competitive market. This is emphatically *not* the same thing as assuming that the market actually is competitive. Pelcovits Reply Decl. at 4. Rather, regulation sets rates at a level that reflects the monopolists actual, forward-looking costs of operating in a monopoly market, even though, left to its own devices, the monopolist would charge higher rates. Pelcovits Reply Decl. at 3-4.

To that extent, pricing regulation is always “counterfactual”: it is necessary only when the market is not competitive, and yet it attempts to set rates at a level that would exist only *if* the market *were* competitive – that is, it could charge no more than its forward-looking costs, efficiently incurred. This is not an “inherent tension” in TELRIC or in any other pricing methodology. It is the very purpose of pricing regulation. So SBC's assertion that TELRIC is “guilty” of aiming for prices that would exist in “a market inhabited by multiple competitors,” while at the same time “assuming a ubiquitous carrier serving the entire market,” SBC Comments at 17, is misconceived. TELRIC does not “assume” a ubiquitous carrier, it is attempting to assess the costs the ILECs actually face in a market. That the ILECs serve essentially the entire market, with all of the concomitant advantages that follow involving scale economies and access to capital is not an “assumption.” It is the truth. Neither does TELRIC assume a market inhabited by multiple competitors. It merely establishes the monopolist's efficient costs. And while it happens to be the case that efficient costs are costs that would occur naturally in a competitive market, that does not mean that TELRIC assumes that such a competitive market exists. TELRIC, in sum, is not riven with contradiction. It is counterfactual only to the extent that any price regulation that attempts to set a rate different than would occur naturally in the market is counterfactual.

The claim that to be “internally consistent,” a TELRIC model must assume cost of capital, scale economies, fill, and depreciation expenses that would exist if many small carriers were building complete telecommunications networks is tantamount to claiming that only the ILECs should be able to enjoy the benefits that arise from the natural monopoly characteristics of telecommunications plant.<sup>7</sup> If such a model were created, the costs of each of these multiple entrants would likely be much higher than the ILEC’s costs. Indeed, it is because their costs would be higher that facilities-based competition is “uneconomic” and unbundling is required. Unbundling enables CLECs to share – at cost – the benefits of ILEC facilities that cannot be efficiently deployed by multiple providers. Understanding that cuts the legs from Qwest’s suggestion that a pricing model must construct an extensive network because of Qwest’s carrier-of-last-resort responsibilities, and at the same time use fill and other inputs based on the false hypothesis that Qwest faces substantial hypothetical facilities-based competition that renders large parts of its network unused. In Qwest’s bizarre view of the world, the *actual level* of facilities-based competition it faces is irrelevant, since “in determining costs, state commissions must account for competitive losses to other carriers that would be expected under th[e] assumption [of the existence of ‘widespread facilities based competition.’].” Qwest Comments at 42. Talk about “excessively hypothetical!”

More frequently, the ILECs put their thumb on the other side of the scale, arguing (wrongly) that since their models do incorporate the scale economies and other benefits of their monopoly, they should also set rates unconstrained by any competitive market force, that is,

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<sup>7</sup> See, e.g., *Michigan 271 Order* ¶ 21 (“new entrants cannot compete effectively if, for example, the price of unbundled network elements precludes efficient entry by not allowing new entrants to take advantage of the incumbent’s economies of scale, scope and density.”); Pelcovits Decl. at 5.

monopoly rates. *See, e.g.*, SBC Comments at 25. But, to repeat, the very point of TELRIC or any other pricing methodology is to impose efficient pricing even though it would not exist absent regulation. It is not a valid criticism of that assumption to insist that in the “real world,” left to their own devices the ILECs would charge more than TELRIC.

## **2. The ILECs’ More Focused Criticisms Of TELRIC Also Lack Merit.**

The ILECs more narrowly claim that because of both technological change and of the uncertainty inherent in planning the development of their network, practices and network placement that were optimally efficient when implemented, say, a decade ago, are less so now. Thus, if yesterday’s investment is valued exclusively based on what is known today, the ILECs claim that they will never be able to recover the costs of even their most efficient investment. *See, e.g.*, Verizon Comments at 4. For that reason, they claim, TELRIC rates fall below those of an efficient forward looking measure of cost, since an efficient rate would necessarily allow an efficient provider to recover its costs. In other words, because (they say) their network is as efficient as could be produced in the real world, yet is constantly declining in value, TELRIC never allows them to recover the “true” value of their network.

This argument, too, is wrong in fact and wrong in theory.

It is wrong in fact because the ILECs’ networks as a whole are *not* constantly declining in value. Regulated entities subject to forward looking pricing *always* complain that they are not being allowed to recover their costs, but “the difference between the prices produced by original and reproduction cost valuation can easily be exaggerated.” II Kahn, *The Economics of Regulation* 112; *see also Verizon Communications, Inc. v. FCC*, 535 U.S. 476, 520 (2001) (there really is “no specter of imminently obsolescent loops requiring a radical revision of reasonable depreciation.”). In truth, parts of the network, such as the switch processor, are declining in

value. Other parts, however, notably outside plant, are rising in value. The remainder are probably neither rising nor falling in value. If changing valuation poses a challenge for pricing models, the ILECs have never established that it is a challenge that is relevant to this debate over TELRIC.<sup>8</sup>

As to the ILECs' theoretical claims, it never makes sense from an economic point of view to base value on investment that is already sunk. The fact that an asset has declined in value, no matter how efficient the decision to purchase that asset at the time it was purchased, simply does not in any way make the current value of the asset depend on the original sunk cost. Not even the ILECs dispute this fundamental premise. Thus, they concede that the network should be priced at what it would cost to purchase the facilities today, not what the ILEC may have paid for them when it purchased them, because the purchase price is irrelevant.

But SBC and Verizon never explain why, by the same token, it makes any sense to price the network based on the particular facilities that were purchased years ago, rather than the facilities an efficient carrier constructing a network would purchase today that provide equivalent functionality. In both cases, the issue is the same. It makes no sense to value assets based on what has already been purchased just because those assets have already been purchased. It is both easier and more accurate to value the assets based on the most efficient technology that would serve the same purpose, as we explain in more detail below. Professor Kahn now writes for the ILECs and disputes this, creating the juvenile epithet "BS TELRIC" for the decision to

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<sup>8</sup> Additionally, the ILECs have not shown all of their investments to be efficient. Price caps (which vary from state to state, and which have been in effect for varying time periods) are designed to promote efficiency, but they are hardly precise measurements of efficiency reductions, and claims like SBC's that price caps work so precisely that there should be an "irrebuttable presumption" that their network is optimally efficient, SBC Comments at 26, are ridiculous.

model only the most recent technology. Previously, however, he had a different view, stating as a truism beyond discussion that if a forward looking model “were correctly defined,” it would “embody the most recent technology.” I Kahn, *Economics of Regulation* 113.<sup>9</sup> Qwest and BellSouth, at least in theory, agree with Kahn the academic (and disagree with SBC and Verizon) and acknowledge the basic premise of TELRIC that only new, most efficient technology should be modeled. The short answer to all of the SBC and Verizon criticisms of TELRIC’s “efficiency” assumptions is that they are backward looking, not forward looking. They in no way justify ILEC efforts to recover embedded costs. The ILECs pay lip service to this essential point, but their proposed “adjustments” to TELRIC all are designed to capture some element of embedded cost.

SBC and Verizon (and to some unexplained extent BellSouth as well) propose a model that values their embedded plant and adds to it the short-run cost of adding small, but costly increments of investment to that plant, investments which are usually based on estimates of investments the ILECs intend to make over some short-term “planning” period. This is said to more realistically model the way new equipment is actually added to the network.<sup>10</sup> But a costing model relying largely on replacement costs is to a significant extent an embedded model. *See Local Competition Order* ¶ 684 (describing a model that relies on existing network design and technology as enabling ILECs to “recover costs based on their existing operations, and prices for interconnection and unbundled elements that reflect inefficient or obsolete network

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<sup>9</sup> *See id.* (“the competitive norm is conceived to be the average total cost of a new plant, using new technology”); *see also Verizon*, 535 U.S. 482 n.5 (describing “current replacement or reproduction cost,” as “a primitive version of the criterion challenged in these cases.”)

<sup>10</sup> *See, e.g., Verizon Comments* at 36.

design and technology. This is essentially an embedded cost methodology.”) And reliance on incremental additions to the network does not change that.

This approach, which is proposed for comment in the *NPRM*, makes no economic sense – if such a short-run period is used, then the forward-looking costs associated with plant that is already in the ground is zero. For while it might be economic for an ILEC to make these additional incremental investments to upgrade and extend their network, given the costs they have already sunk, that says nothing about the value of the entire network. *See* Willig Decl. ¶ 15. That is why BellSouth opposes such a “mixed” model as a “short-run approach” involving “violations of the forward-looking, long-run cost principles.” BellSouth Comments at 15, 16. Qwest too, at least in theory, proposes only modest adjustments to TELRIC, and apparently would maintain the assumption that only the most efficient technology be modeled (though it would impose a presumption that the ILEC’s actual network contains such technology).<sup>11</sup>

SBC and Verizon nevertheless insist that application of forward-looking pricing principles fails to reflect the costs of constructing their network, given the fact that it is constantly upgraded and so inevitably contains a mix of old and new technology. But they are simply wrong about this. Consider the cost of a computer that a consumer purchased two years ago for \$1,000 with 256 megabytes of memory. Today the consumer needs an additional 256 mb memory. There is a new computer on the market with 512 mb of memory which costs only

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<sup>11</sup> Unfortunately, BellSouth at once identifies the problems with this approach and then appears to adopt it. Thus, while it correctly notes that a long-run cost model “would reflect the incorporation of new technology and facilities within the network in order to reflect efficient operations” as TELRIC does, BellSouth Comments at 15, it paradoxically goes on to assert that not “every part of the existing network” would be modeled in this way, but instead, efficient technology is modeled only “if efficient operations support doing so.” *Id.* By this BellSouth apparently means new technology is modeled only if it would be efficient for the ILEC to install new technology given the nature of its embedded network – the very short-run standard it correctly identified as inappropriate for a cost model.



\$800. The consumer could either buy that new computer, or purchase the additional memory for \$100. Unless there is some other reason to buy a new computer, the consumer would choose to purchase the additional memory for only \$100, as compared with the \$800 it would cost for a new computer. That is particularly so if the existing computer could not readily be removed from its existing location. But the fact that a rational person with an existing computer would purchase the memory rather than the new computer, and thus is in some sense “constrained” by his prior purchase, does not mean that the forward-looking cost of a computer with 512 mb of power is more than \$800.

To the contrary, the reason the rational choice is to purchase the additional memory is that the cost of the memory is \$100. The person who already has the computer makes his decision based on the short-run incremental cost of the computer memory, since the addition of the memory provides him with all of the functionality he needs. But the ILECs want to be compensated for more than their short-run incremental costs; they want their long run incremental costs – the costs of the entire 512 megabytes of computing power. That is \$800.

SBC and Verizon say this \$800 will not fully compensate them because they are “constrained” to purchase the additional memory, not the new computer. Although they do not say so explicitly, they play on the notion that the \$800 is seemingly insufficient in this example because the computer owner actually paid a total of \$1100 – \$1,000 for the original computer plus \$100 for the upgrade. But that is the owners’ embedded costs, not his forward looking costs. Moreover, the computer owner already received compensation for this “missing” \$300 – his two year use of the computer. If the computer owner were a regulated utility charging ratepayers for use of the computer, the cost recovery in those two years would have included \$300 for the diminishing value of the computer (in the form of depreciation expense). Thus, the

ILECs' implicit argument that they have not been compensated for their embedded costs is really an argument that depreciation has been insufficient. *See* Pelcovits Reply Decl. at 6. As we show later, the empirical evidence shows this is not the case.

In any event, although SBC and Verizon's argument is implicitly premised on the notion that they should be permitted to recover their embedded costs, they are unwilling to say this explicitly. To the contrary, they acknowledge that they are entitled only to their forward-looking costs, but say these should not be measured based on the most efficient technology that exists. Yet, as we have seen, the forward-looking costs are \$800 – the cost for a new computer. The ILECs cannot dispute that this is the forward-looking cost. But the ILECs suggest that another way to calculate forward-looking costs would be to determine the reproduction costs for the existing network – in the example, the costs of purchasing a computer of the same type that was purchased two years ago with 256 megabytes of memory, and an additional 256 megabytes of memory. As we have seen, the value of this 512 megabyte package is \$800 – no one would pay more than \$800 to purchase functionality that could be purchased on the market for \$800. If the two-year old computer and the new upgrade were properly valued and added together, the result should be no different than the \$800 it would cost to purchase a new computer.<sup>12</sup> But it is far more complicated for a regulator to determine how much it would cost to purchase the old computer (properly depreciated) and new upgrade, than to identify the value of a new 512 megabyte computer.

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<sup>12</sup> Verizon grudgingly acknowledges this point, Verizon Comments at 36 (citing Shelanski Decl. ¶¶ 22-24), though it fails to explain why the value of old technology is only “to some extent” constrained by new technology, or why, in its view, “to some extent” it is not constrained. It also fails to explain its fierce objection to modeling new technology if the result would likely be the same whether new or old technology is modeled.

Thus at best the ILEC models add complexity for no reason. But the ILECs do not fight so incessantly for modeling the current value of old technology for no reason. Their modeling proposals allow for multiple errors that work in their favor to be introduced in their models, and they insist on the more complicated model precisely because it will likely be applied in an improper manner.

First, replacement models greatly increase reliance on ILEC books and records, for only those records will reveal precisely what mix of equipment the ILEC happens to have purchased in the past (and intends to purchase over the “planning period”). Pelcovits Reply Decl. at 7. Thus reliance on the actual ILEC network provides the ILECs (which are the only party in a pricing case that has information about their network) the opportunity to misstate, exaggerate, and otherwise distort input values, and to recover embedded costs. It also presumes that their existing networks are efficient.

Second, while it is a relatively straightforward matter to determine what it costs to purchase new technology currently widely available in the market, and a relative straightforward matter to determine what functionality is provided by this equipment, it is more complicated (and subject to dispute) to value old technology whose value is constrained by that new technology. Pelcovits Reply Decl. at 7. Doing so will involve disputes about the extent to which the functionality of the new and old technology are similar. The ILECs fall over themselves in their Comments to minimize this problem,<sup>13</sup> but fail to explain why the greatly more complicated modeling they propose is in any way more accurate or reliable than TELRIC.

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<sup>13</sup> SBC would make exceptions for “obsolete” equipment in its network, SBC Comments at 32, without explaining what that means, or how it is consistent with the “irrebutable presumption” that its network as currently configured is perfectly efficient. Verizon Comments at [].

Third, by focusing extensively (or, in the case of one of the Verizon proposals, exclusively<sup>14</sup>) on the purchase price of the upgrades, and ignoring the savings accomplished as a result of scale economies when an entire network is constructed, the models greatly overstate costs by any rational measure.

Fourth, the ILECs insist on modeling technology near the end of its useful life because it is fast being replaced by newer technology even though no carrier in the real world would install this equipment. At the same time they insist that this old technology they model be given extremely short depreciation lives, precisely because of its age. The result is irrationally high rates that bear no relation to the “real world.”<sup>15</sup>

Fifth, while old facilities will have the same value as telecommunications equipment of new facilities performing the same function, the price of purchasing the old facilities on the market and installing them may be higher than that for the new facilities. SBC provides the example of an analog switch, which generally is not available on the market today, and says that it excludes such obsolete equipment from its models. SBC Comments at 32. While SBC characterizes that example as anomalous, it is not. There are a number of different reasons that old equipment could have a market price higher than a price based purely on its current value as

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<sup>14</sup> Verizon’s alternative proposal is to construct an entire hypothetical network using as a “proxy” the additions to its existing network it claims to be planning to make over the next three years. Verizon Comments at 37. Unlike the other ILEC proposals, Verizon’s alternative proposal is incoherent. It models nothing real at all, has been rejected by state commissions virtually everywhere it has been introduced, and apparently is designed to allow Verizon to claim “forward looking” costs that bear no relation to the cost of building and operating its network.

<sup>15</sup> Consider, for example, equipment that has a very low market price (either for the old technology or new technology) but that has a high installation cost so that the up-front cost of the new and old technology plus installation is similar. If a network model costs out the price of the old technology plus installation costs, the cost will be much higher than the cost of the new technology plus installation costs because the old technology has a much shorter economic life. A model that calculates the costs of installing the old technology will thus reach a result that is far too high.

telecommunications equipment. The equipment (such as copper) may have a second use that keeps its market price high, for example. Pelcovits Reply Decl. at 7. And attempting to exclude from the model equipment that is priced above the value it has in a telecommunications network – whether through criteria of “obsolescence” or otherwise would pose intractable problems. That is why SBC provides *no* explanation of how this could be accomplished.

All of these problems are avoided if a model is based on costs incurred over the long run, rather than the replacement cost models proposed by the ILECs. And this should not be a complicated decision – there are *no* countervailing benefits to the complex modeling proposed by the ILECs here.

As to that, it is certainly *not* the case that long-run models fail to account for assets that decline in value or for the fact that networks expand to meet future demand in ways that are not entirely predictable. They do. But in a forward-looking model it is irrelevant that an asset already in the network has declined in value since it was first installed. Depreciation should already have accounted for that loss in value, but the model properly takes no account of *the past* loss in value. That would simply be to recover embedded cost, and though that is what all of the ILEC models in the end propose, it is not economically rational. Pelcovits Reply Decl. at 6. Instead, the goal of a forward-looking model when an asset will decline in value on a going-forward basis is to assure recovery of the cost of that new declining-cost asset over the life of that asset.<sup>16</sup> If assets were, in fact, declining in value, TELRIC models could account for this through use of accelerated depreciation schedules, in which more of the cost of the asset is

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<sup>16</sup> As Kahn writes, the issue is not whether depreciation properly accounted for “investment costs historically incurred, but . . . [whether depreciation] and other capital costs will be higher than they would otherwise be *in the future* by virtue of the incremental production in question.” I Kahn, *The Economics of Regulation* 73.

recovered in the early years of its life.<sup>17</sup> FCC economists have alternately proposed applying “correction” factors that in theory could accomplish the same result.<sup>18</sup>

But as these economists are quick to point out, the opposite problem presents itself with assets that *grow* in value over time. That is, if they are to be treated accurately, these assets conversely must be subject to a correction factor that *lowers* their cost, or a depreciation schedule that has the same effect.<sup>19</sup>

Thus, the fact that certain components of the telephone network decline or rise in value over time does not make TELRIC an inappropriate or inaccurate measure of the value of the network. At most, it would require an adjustment to input values. Pelcovits Reply Decl. at 6. And, the question is, then, not whether TELRIC suffers from some analytic flaw, but whether the theoretical under- or over-pricing that results from using straight-line depreciation merits adding the complexity to the TELRIC model that would be necessary to correct for this error. As we have previously explained, it does not. Majoros Decl. at 33-36.

While it is at least theoretically possible that TELRIC slightly overestimates the cost of bottleneck loop facilities, just as it may slightly underestimate the cost of switching equipment, if this distortion had any practical significance, the competitors would stand to lose far more than the ILECs. After all, while the ILECs incessantly point to the declining value of switch processors, that represents only one (increasingly small) component of switch price, and only

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<sup>17</sup> See, e.g., I Kahn, *Economics of Regulation* 122.

<sup>18</sup> David M. Mandy and William W. Sharkey, Dynamic Pricing and Investment from Static Proxy Models, OSP Working Paper Series, No. 40 (Sept. 2003).

<sup>19</sup> Indeed, the ILECs acknowledge as much when they (wrongly) accuse CLECs of departing from TELRIC in attempting to model only the embedded cost of the loop plant, which, the ILECs assert “reflects the lower costs of building a network many years ago, before development made the process more expensive.” SBC Comments at 62.

one component of the network. It is the loop plant that remains the far more expensive and significant bottleneck component of the network. If the distortion were significant, the criticism would be coming from the competitors, not the ILECs.

**B. The ILECs' Practical Criticisms of TELRIC Are Baseless.**

The ILECs also mount a challenge to TELRIC's practicality. They say it is a "black box," because it is not sufficiently moored in the real world, and so lends itself to battles of experts who are free to make any claims they choose about the "hypothetical network," limited only by the reach of their creative fancy. As a consequence, the ILECs insist, TELRIC allows state commissions to set increasingly lower rates, bankrupting the ILECs as the commissions cave into popular pressure for cheap phone service.<sup>20</sup>

As the other commenters uniformly demonstrate, this is a caricature of TELRIC proceedings, and an insult to state commissions.

To begin, the ILECs evidently do not know the meaning of "black box," which is something with known results, "but unknown or unspecified constituents and means of operation." American Heritage Dictionary, 4<sup>th</sup> Ed. Thus, as the *NPRM* makes clear, the FCC properly seeks to avoid methodologies that "make network modeling opaque and make it difficult to understand how actual UNE rates are derived." *NPRM* ¶ 7 As we show in what follows, that is an apt description of the models proposed by the ILECs in this docket, since their invocation of an "actual" network on which to base UNE rates is entirely the project of smoke, mirrors, and behind-the-scenes calculations and algorithms. But in a TELRIC model every constituent input is known and entirely open to discussion, and all of the formulae and other "means of operation" are equally transparent. It is the very opposite of a black box.

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<sup>20</sup> See, e.g., Qwest Comments at 35, 47.

The ILECs' complaint about TELRIC is not that its input values and formula are unknown, but that the input values are too subject to manipulation because they are not based on real world network constraints.<sup>21</sup> But as MCI and other commenters demonstrated, that is wrong in two respects.

First, TELRIC model inputs are based on real-world equipment costs and engineering specifications. They generally model equipment the ILECs use in their networks, based on engineering specifications upon which the ILECs themselves rely in building, extending and maintaining their network. Actual ILEC practices are hardly "irrelevant" in TELRIC modeling. To the contrary, much in TELRIC models follows actual ILEC network practices. The ILEC claims that actual practices "may not even be considered" in setting TELRIC rates, Qwest Comments at iii, is a caricature. In cost proceedings, when one party or another proposes a departure from an actual ILEC practice on the ground that it is no longer the most efficient way to perform a function, the party generally relies on actual network experiences to show this is so (typically experiences from other parts of the ILEC network). The other side is of course free to propose that a different LEC practice provides the better model. In addition, to the extent that the model can incorporate real facts about the physical world, it does, and nothing in TELRIC's assumptions would require that topographical and other facts be ignored in favor of more hypothetical structures. In short, TELRIC is simply not as "hypothetical" as its critics claim it to

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<sup>21</sup> The ILECs point to what they say is a wide variance in state rates to support this argument. But the variance is not nearly as wide as the ILECs suggest. And at least some of the variance stems from the ILECs' ability to convince state commissions to adopt rates inconsistent with TELRIC principles – based on many of the same arguments they make here as attacks on TELRIC. They have then defended these rates in § 271 proceedings on the basis that TELRIC allows for a wide range of reasonable rates. Thus, the range they now criticize is a result of their own advocacy.



be. To the extent that real world data are available in reliable and verifiable form, TELRIC is fully responsive to “actual” network experience.

Second, and perhaps even more importantly, the ILECs’ alternative models are simply not as “real” as their proponents claim them to be. The ILEC comments overflow with encomiums to “real world” input values derived from their “actual” network. *E.g.*, BellSouth Comments at 3; Verizon Comments at 28. But they introduce no models for the Commission to inspect. The reality is that the ILEC networks are too complex, and the ILECs frequently do not maintain records in sufficient detail to permit them to extract accurate data for use in pricing models. Thus, SBC and Verizon heap scorn upon arithmetical formula used to approximate actual customer locations, and propose instead using “routing characteristics of the actual network” in the modeling. SBC Comments at 58; Verizon Comments at 28. But their own models do not use such actual data, because it does not exist, or, at least, does not exist in a form that can be extracted and used in a cost model. Indeed, as one ILEC, BellSouth, essentially concedes, no model of a “real world” network is anything other than the product of sampling and algorithmic modeling. BellSouth’s submission describes how it locates customers and configures its outside plant based upon “minimum spanning road tree algorithms,” BellSouth Comments at 14, precisely the kinds of arithmetical formula the other ILECs’ mock as “exercises in methodological obscurantism,” and “modeling fantasy.” *Id.* In this respect, then, the only difference between TELRIC models and BellSouth’s model, on the one hand, and the other ILEC models, on the other, is that in the former the formulae and arithmetical assumptions used to generate outside plant are open and subject to debate and cross examination. In the other ILEC models, the loop routes are no more “real,” but their formulae and assumptions are less open to proper scrutiny and therefore less verifiable. In such a context, the potential for ILEC

manipulation to allow recovery of embedded costs is extreme.<sup>22</sup> And while the ILECs disparage “experts,” Verizon Comments at 8, their own models rely every bit as much on expert testimony to support their sampling, modeling and simplifying assumptions. *See Verizon*, 535 U.S. at 522 (“At bottom, battles of experts are bound to be part of any ratesetting scheme, and the FCC was reasonable to prefer TELRIC over alternative fixed-cost schemes that preserve home-field advantages for the incumbents.”)

Additionally, for reasons that are poorly explained, the proposed ILEC models do not even purport to model their actual networks, but instead would model something that does not exist. Depending on which ILEC proposal is considered, the modeled network is one that ILEC engineers postulate will exist sometime in the future (SBC and BellSouth), or is an entirely fictitious network made up of equipment the ILECs postulate they will purchase over the next several years (Verizon). Nor do their hypothetical networks include only the equipment in their actual network, now or at some time in the future. Instead, in some models more up-to-date equipment is substituted (Qwest), or, up to date equipment is substituted when existing equipment is no longer on the market (SBC Comments at 32-33), or up to date equipment is substituted based on how engineering guidelines say replacement should occur (BellSouth). So the choices offered the Commission in the opening comments are not between models of hypothetical networks and real networks, they are choices among models of hypothetical

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<sup>22</sup> *See, e.g., Verizon*, 535 U.S. at 499 (explaining that even under ratemaking based on embedded costs, regulators often had to reject utilities’ estimates of these costs as highly inflated in an effort to maximize claimed expenditures.”); *id.* at 512 (“Even if incumbents have built and are operating leased elements at economically efficient costs, the temptation would remain to overstate book costs to ratemaking commissions and so perpetuate the intractable problems that led to the price-cap innovation.”); *id.* at 522 (modeling exercise dependent on embedded costs is dependent on “similar sorts of complexity in reckoning” as TELRIC “exacerbated by an asymmetry of information, much to the utilities benefit.”)

networks based on varying sets of assumptions. We discuss which of these assumptions is the more reliable and sound later. *See infra* pp. 28-34. For present purposes, it is enough to note that the ILECs are not entitled to the rhetoric they invoke about “real” versus “hypothetical.”

In sum, the ILECs’ mantra is that the model is best that models least of all, and they repeatedly declare that fidelity to the “actual” network will cure all the supposed ills of the current TELRIC regime. But this incantation is a sound bite, not an argument, and it breezes past all of the issues that a regulator has to face when setting a rate. If the Commission were establishing a price for some simple discrete item, perhaps there would be no need to model. But (as the ILECs take great pains to point out elsewhere) their networks are large and complex. Their value cannot be assessed without modeling, and for all of their rhetoric about “real” and “actual,” the ILECs never offer concrete proposals to implement their rhetoric. For regulatory purposes, the “actual” network simply does not exist. Instead, as we stressed in our opening submission, what stands behind the ILECs’ rhetoric are their own models that are less transparent, less reliable, and less capable of verification. Indeed, they do not even submit these models in this proceeding, leaving the Commission to evaluate their claims based only on their soundbites.

**C. The ILECs’ Claims About the Baleful Consequences of TELRIC Are Baseless.**

The ILECs’ claim that market behavior proves that TELRIC understates their costs, as investment in their own networks has been deterred, while facilities-based competition too has been deterred in favor of free riding encouraged by TELRIC. And they claim that it is even more important that the rules be “corrected” on a going-forward basis. Neither claim has merit.

**1. TELRIC Has Not Deterred CLEC Investment.**

The ILECs' principal complaint about TELRIC (and the empirical basis for their claim that TELRIC sets rates at too low a level) is that it has and will continue to deter investment. But under the post-Triennial Review regime in which TELRIC will operate, an element will be available for lease only when it is uneconomic for competitors to self-provision the element. That being so, it will never be the case that competitors will lease when they could have built, for if they could have provisioned their own facilities, those facilities will never be available for lease in the first place. In this new regime, only artificially *high* UNE prices "eradicate any incentive for a new entrant to consider self-provisioning its own network." BellSouth Comments at 2. For if a bottleneck input is priced too high, it makes it uneconomic for competitors to use that leased facility in conjunction with their own self-provisioned facilities. Indeed, the real target of the ILECs' advocacy is loop rates, and they seek to drive those rates up to make facilities-based switch-based competition impossible.

The ILECs' real concern is not to spur CLEC investment, but to deter CLEC competition altogether. Thus, as Qwest candidly acknowledges, it attacks TELRIC because high network element pricing would disable UNE-P, and UNE-P, in Qwest's view, is synthetic competition that disserves the public. Qwest Comments at 4. In other words, Qwest sees this proceeding as a way to get a second bite of the apple that it failed to consume in the TRO. This approach is objectionable on many levels. First, the ILECs are not entitled to a second bite of the apple. Second, they are wrong about UNE-P, which is why they have been so notably unsuccessful in persuading this Commission, state commissions or federal courts now too numerous to mention to eliminate it. Third, by candidly acknowledging that their goal is to set rates so high that no carrier could provide services using facilities at the rates set, Qwest shows too much of the

ILECs' hand – UNE rates are supposed to facilitate competitive entry through leased facilities when the FCC has found that entry is otherwise “non-economic.” All Qwest wants is UNE rates that don't work. And the claim – echoed by all of the other ILECs – that their desire is to promote more facilities-based competition rings especially hollow. With use of their scale-sensitive network already declining as a result of pressures from wireless, broadband and cable competition, more facilities-based competition is the last thing these carriers want. They would not be proposing these “reforms” to TELRIC if they did not believe that adoption of their proposals would suppress competition.

Additionally, even if the Commission were otherwise inclined to use the TELRIC proceeding to do indirectly what it declined to do directly in the *TRO* and shut down UNE-P, it needs to be stressed that this proceeding is not only about rates for unbundling local switching and UNE-P, but for all of the other elements as well. Indeed, it comes as no surprise that most of the proposals advanced by the ILECs directly target *loop* rates and non-recurring charges that come into play when competitors seek to lease stand-alone loops. By shutting down access to the bottleneck voice-grade loop, the ILECs' TELRIC proposals aim at all facilities-based wireline competition, and not just (or even primarily) at UNE-P.

Furthermore, the experience of the last seven years under a more generous leasing regime does not suggest that TELRIC has, in fact, deterred investment. The ILECs' rhetoric on this point is so overheated, and so unmoored from the facts, that at times even within the same paragraph they make wildly contradictory statements about investment. For example, Verizon complains (based on nothing) that TELRIC has ferociously suppressed telecommunications investment to the tune of \$60 billion, and then almost in the same breath argues that TELRIC has outlived its usefulness because of the “explosive growth in intermodal competition” over this

same period. Verizon Comments ii-iii. Both things cannot be true. And, the ILEC claim that virtually everything wrong with the modern world is properly attributed to TELRIC, *see, e.g., id.* at ii (TELRIC has cost every household in the country exactly \$101), makes it hard to take too seriously anything the ILECs say on this point. The Commission considered the ILECs' more substantial efforts to prove their points about investment in the *Triennial* and found their evidence wanting. *TRO* ¶ 178.

## **2. TELRIC Has Not Deterred and Will Not Deter ILEC Investment.**

The ILECs have been arguing for seven years that if TELRIC were not immediately reformed to their liking it would promptly bankrupt them.<sup>23</sup> But they continue to survive. And not even once have they tried to litigate a cost-recovery or takings claim either at the Commission or in any court. Neither have they been tempted to lease facilities at TELRIC rates to compete out-of-region. Their claims of poverty and investment incentives should be ignored.

Going-forward, their claims make even less sense, if that is possible. TELRIC can not possibly deter ILEC investment "in capital-intensive new technologies," Verizon Comments at 14, for the simple reason that the FCC has now denied competitors access to any new technology the ILECs deploy. TELRIC now applies only to old technology, and for the most part to old technology already in the ground. Having won this fight, the ILECs are no longer entitled to the rhetoric of the victim to which they have become so attached.

Finally, while the ILECs argue that TELRIC copper loop rates should go up, they fail to acknowledge the changes in the *TRO* that should lead to those rates going down. Simply put,

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<sup>23</sup> To cite just one example of many, on August 28, 2002, SBC Chairman Ed Whitacre claimed in a meeting with Michigan PSC staff and a number of MCI officers that if Michigan specifically (and other states generally) did not change their approach to TELRIC pricing and UNE-P, SBC would be bankrupt within five quarters, that is, by November 2003.

there is no justification for assessing anything greater than *short-run* marginal cost for an asset like “retired” copper loops that will no longer be reproduced. No less an authority than Professor Kahn argues that the point is beyond dispute:

[R]eplacement costs belong in marginal cost and in price only if (there is a likelihood that) they will in fact be incurred; and this will depend, in turn, on whether there is likely to be sufficient demand to justify those additional expenditures. Suppose . . . production of the additional service is the only possible use of the equipment in question, present or future, and that output cannot now or in the foreseeable future be sold for a price that covers the additional depreciation, or the cost of the eventual additional repairs, attributable to operating instead of not operating. As long as users *will* pay a price covering the immediate, variable cost of operation . . . it would be better from the standpoint both of society and the stockholders to charge them such a price and continue to operate. I Kahn, *The Economics of Regulation* 73.

## **II. THE ILEC PROPOSED CHANGES TO TELRIC ARE UNSOUND**

As discussed above, what the ILECs characterize as a simple process of taking account of existing network attributes and then generating appropriate UNE rates is not a move away from network modeling but rather an effort by the ILECs to wrest control of the modeling process from the institutions – this Commission and the state commissions – that are charged with the task of regulating the telecommunications industry. Allowing ILECs such one-sided control of the inputs that are the foundation of the ratemaking process is tantamount to inviting them to set the rates themselves, a privilege only available in the monopoly context that the Telecommunications Act is intended to disrupt.

Taking control of the modeling process would allow ILECs to make every critical determination in the ratemaking process. Cost allocation, for example, which presents considerable incentives for interested manipulation can never be truly accurate when the underlying network assumptions are unverifiable. Clearly, ILECs have powerful incentives to attribute costs directly to network elements that are subject to UNE leasing, and such allocations

should therefore attract considerable regulatory scrutiny. Allowing cost allocations to be based so heavily on self-reported data is to allow the foxes to guard the henhouses; moreover, given the fact that considerable portions of ILEC networks now are not subject to unbundling, now more than ever relying on ILECs to allocate costs will generate serious cross-subsidies from UNEs to ILEC retail operations.

Similarly, the ILECs insistence that their current networks (and limited future developments) are presumptively efficient is highly questionable. The claim that wildly different price cap regimes across the country in place for varying lengths of time have with caliper-like precision “irrebutably” resulted in efficient ILEC operations in every respect is absurd. Price caps, for example, often have a lower formula adjustment mechanism, whereby if an ILEC’s return falls below a certain level, the price cap is simply adjusted to ensure this minimum rate of return. That hardly provides the ILEC an inducement to efficiency comparable to that which would exist in a competitive market. In terms of encouraging optimal efficiency, regulation is simply no substitute for true competition.

The flaws in the ILEC proposals are underscored by the ILECs’ failure to submit any cost models based on the principles they propose. Thus, the Commission is left to base decisions on rhetoric about “real costs” without any concrete basis to evaluate that discussion. In state proceedings, in universal service proceedings before this Commission, and in the Virginia Arbitration, decisionmakers have been presented with actual models and been able to examine the ILECs’ rhetorical claims on the basis of their concrete application. It is no accident that the ILECs fail to present any such models here.

The shortcomings of the ILECs’ proposed methods betray their real agenda: ILECs seek to recover their historical costs. Since the introduction of TELRIC, ILECs have protested the



fact that the Act allows only the recovery of forward-looking costs. Now, through sheer persistence, the ILECs seek an opportunity to refashion telecommunications regulation to achieve that impermissible goal. By using “actual” costs as a euphemism for “embedded” costs, the ILECs are seeking to overturn the pro-competition policies adopted by Congress in the Act.

**A. Particulars of Bell Proposals**

**1. Verizon**

The aggression of Verizon’s submission in this proceeding has the advantage, at least, of coming close to an open admission that it senses an opportunity to turn back the clock and recover its embedded costs. Indeed, Verizon devotes considerable effort to turning this proceeding into a retroactive process through which it can seek compensation for its alleged past injuries.

Verizon suggests that it should be allowed simply to make assertions about its actual network (assertions that state proceedings have revealed as highly questionable), which CLECs and regulators must then simply accept on faith. Verizon, in fact, devotes considerable attention to refashioning regulatory procedure to protect the informational advantage it seeks to introduce with its “actual” network modeling. Under Verizon’s proposal, ILECs would set the parameters of any pricing inquiry by providing the information it considers necessary to generate UNE rates. (Verizon Comments at 106). Thereafter, Verizon suggests, CLECs would bear the burden of establishing why Verizon’s data were unreliable, and, moreover, CLECs would be further hampered by the stringent limits on discovery that Verizon would have the Commission impose. While Verizon characterizes its approach as being based on “robust real world data,” derived from either ILEC proprietary databases or ARMIS, and therefore more appropriate for equitable ratesetting, even the most cursory examination of these data sources makes clear that the

forthcoming data are anything but robust, as state proceedings have demonstrated when real examination has occurred. Under Verizon's proposal, however, such examination would not be possible.

Verizon's real agenda is perhaps most dramatically evident in its insistence that the *NPRM* somehow entitles it to reopen *all* previous ratemaking proceedings through the establishment of independent procedures through which it can relive old battles and seek a better outcome. This time, however, Verizon proposes to change the rules, and, by controlling the process, to introduce what amounts to nothing more than self-regulation in place of the current regulatory framework which, as the opening comments in this proceeding illustrate, is favored by all but the regulated monopolists whose stranglehold on this essential public service the Act was designed to break.

Verizon's claim that its approach is "forward-looking," cannot withstand scrutiny. It offers two alternatives. One approach is to superimpose a kind of projection of what its actual network would look like over a three-year planning period on its already questionable account of what its network currently comprises. For most of the equipment in the network, which will not be replaced, this model is little more than an effort to capture embedded costs. *See Pelcovits Reply Decl.* at 12-13 (criticizing Verizon's proposals). Indeed, if Verizon really believed that replacement costs satisfactorily modeled forward-looking costs, it would have no reason to add the veneer of the changes it is projected to make over a three-year planning period. But if Verizon followed through on the implications of its proposal – that forward-looking costs depend (at least in part) on the equipment a carrier would install today, it would not limit its proposal to those parts of the network that the incumbent projects it will happen to replace over the next one and a half years. Long run forward-looking costs do not depend on whether an incumbent

replaces no equipment or a substantial amount of equipment in the near future. Verizon's three-year planning period thus adds nothing to the methodological soundness of Verizon's proposal, but simply functions to provide a kind of forward-looking veneer.

Verizon's second proposal is even less sound. It models only additions it will make over the planning period, ignoring altogether the network already in place and all of the scale economies it represents. But those network additions do not add up to a network of any size. The only thing the model models is network purchases over the next three years. Verizon never explains what this has to do with the value of its network under any theory of value. Even if Verizon accurately projects the equipment it will replace, charging CLECs for three years of piecemeal investment loses the scale economies that the construction of a network typically captures, forces CLECs to pay for equipment that the ILEC only purchases as a result of the sunk investments it has already made, and makes "long run forward looking costs" dependent on the type of changes Verizon happens to make over the planning period.

Significantly, this "planning period" method is not even adopted by all other ILECs. SBC's methodology includes a similar proposal, but BellSouth soundly rejects this approach as "virtually endors[ing] a short-run approach to cost development." (BellSouth Comments at 16). BellSouth is right. The incremental investments an ILEC makes over three years, given the costs it has sunk in its existing network, may be relevant in assessing short-run incremental costs, but not long-run costs. Since the ILECs want their long-run incremental costs for all the equipment needed for the network, the three year period is irrelevant. The "planning period" approach is simply another way to generate a "procedural shortcut" – one which would be entirely ILEC controlled – and would "negatively impact the reasonableness" of UNE rates (BellSouth Comments at 20).

## **2. SBC**

Like Verizon, SBC proposes an ILEC-controlled process by which an “actual” network is self-reported and forms the basis of the ratemaking process. Of particular note is the fact that, although SBC rails against what it calls the “internal tension” in the current TELRIC methodology, it rejects what would seem to be the logical answer to this complaint, were it indeed valid: the application of the perfect competition hypothesis across the entire pricing inquiry. Instead, SBC, like Verizon, advocates a method that puts the ILECs in control of UNE ratesetting. But again, SBC’s exhortation to use the “actual” network conveniently fails to illustrate how the data of this “actual” network are to be retrieved. And, as close scrutiny of the ILECs’ network assumptions makes clear, these data are not available in any usable form. Short of a prohibitively vast surveying process, the exact contours of an existing network, the relative quantities of various types of plant, the length of embedded cables, and so forth, remain little more than a guess.

SBC goes so far as to say that its existing network should be irrebuttably presumed to be efficient, despite the fact that it is not able to produce adequate data about its own network. And SBC’s efforts to make its methodology forward-looking – like Verizon, SBC proposes adjusting its account of its network over a three-year planning period – again merely adds a forward-looking patina to its efforts to recover embedded costs. And while SBC argues that its three-year projection period is likely to push network value down, and so reduce rates, its bias towards historical costs is revealed when it suggests using recent historical expenditures as “highly probative evidence” of what it calls its actual forward-looking costs.

### 3. Qwest

Qwest proposes modeling principles that on their face show more fidelity to TELRIC.

Qwest states that the FCC should define forward-looking costs as “(1) the investment required to build and maintain a ubiquitous replacement network in the ILEC’s service territory, assuming the use of the most efficient network designs, technologies and practices that, as demonstrated by actual marketplace evidence, are currently deployed on a scope and scale comparable to that of the ILEC, and (2) the expenses that an efficient ILEC would incur, also as demonstrated by the marketplace evidence.” Qwest Comments at 16.

Thus, it appears that for all of its rhetorical flourishes, Qwest’s primary criticism of TELRIC is that it may permit modeling based on technologies or practices not used in a network of the ILEC’s size. TELRIC costs, Qwest insists, must reflect “objective reality” (15) and “comport with facts on the ground.” But no one disputes that. The relevant questions are what “facts on the ground” can be modeled, who has access to the relevant information, how reliable it is, and so on. As to that, Qwest is utterly silent. An actual proposed model would be helpful, as would examples of what Qwest’s limitations would rule out, but Qwest offers nothing more than the assertion that it believes in “facts.” In addressing TELRIC’s commitment to network efficiency, Qwest criticizes “speculation on behalf of vested interests” (15), which it proposes to replace with self-reported accounts of network deployment and operating practices. But unless this self-reported material can be easily verified, it is no better than “speculation on behalf of vested interests.” And even where it can be verified, information on the ILECs’ network, while relevant, cannot be dispositive. ILEC practices and technology are constrained by how their networks have been constructed to date. Moreover, ILECs cannot be presumed to act efficiently, as we have explained.

#### **4. BellSouth**

In some respects, BellSouth's proposed model throws the shortcomings of other models into sharp relief, as it recognizes that there are no accurate useful data on how the existing ILEC outside plant are deployed and also recognizes the irrelevance of the three-year planning period. Recognizing the unreliability of loop length-based models, and conceding the inevitability of sampling and modeling, BellSouth proposes to use geocoded customer locations and remote terminal locations, and then build a network around those data. BellSouth also criticizes efforts like Qwest's to "pre-identify sources of TELRIC inputs," explaining that "[w]hatever sources made the list could easily have a preclusive effect as to all other sources not on the list, even though the non-list sources might be more reflective of the ILEC's forward-looking costs." BellSouth Comments at 21.

Nonetheless, BellSouth's proposed modeling principles are also flawed. BellSouth recommends modeling "currently available technologies that will actually be deployed as new facilities and equipment are needed to meet growth or as existing facilities/equipment are replaced. Hence, network architectures and network designs reflected in the ILEC's engineering guidelines" should be used. BellSouth Comments at 19. But it is unclear what BellSouth means by this. For example, where an ILEC has switches compatible with UDLC but not IDLC, the ILEC's engineering guidelines might dictate replacement of existing UDLC with more UDLC because the ILEC had already paid for the UDLC-compatible switches. But if both the existing UDLC and the switch needed to be replaced, the engineering guidelines (if they covered this situation) might then dictate purchase of an IDLC compatible switch and IDLC. In other words, the dictates of the ILECs' engineering guidelines presumably depend on how much of the

network is being replaced. BellSouth fails to explain why under proper costing principles, a regulator should assume that something less than the whole network is being replaced.

### **III. INPUT ISSUES**

#### **A. Cost of Capital**

The ILECs make two broad points about cost of capital. The first, following the Commission's statements in the *TRO*, is that for theoretical consistency the cost of capital should represent that of a competitive carrier, since TELRIC hypothesizes a competitive market. Although the Commission suggested something to that effect in the *TRO*, it is unsound and, upon reflection, should be rejected here.

As we demonstrated previously, TELRIC is meant to capture the ILECs' *actual* costs, if they were efficient, including their actual cost of capital. It is not meant to capture the cost of some hypothetical carrier operating in a hypothetical competitive market. If an ILEC, due to its actual position in the marketplace, is able to achieve a particular cost of capital, but its facilities nevertheless are priced on the counterfactual assumption that it has some higher cost, it will be able to operate with a lower cost structure than its competitor who needs access to ILEC facilities in order to compete. If that were to happen, the purposes of regulating prices in the first instance will be frustrated. To that extent, basing cost of capital on the assumption that the ILEC faces vigorous facilities-based competition that it does not face is no different than pricing facilities without regard to the ILECs' actual scale economies based on the counterfactual assumption that it is just one of many small facilities-based competitors in the marketplace.

That is not to say that the cost of capital calculation should not take account the very real (but limited) intermodal competition it faces. But the broader claims proposed by the ILECs should be rejected as inconsistent with the purposes of the pricing regime.

The ILECs' second overarching claim is that an option value premium should be added to the cost of capital calculation, to take account of the risks that accompany irreversible investments in the network. This is yet another meritless ILEC argument with a long pedigree, and the Commission should reject it now as it did in 1996 when it was first proposed by Professor Hausman.

As the attached reply declaration of Michael Pelcovits explains, while there are risks associated with high sunk costs, those risks are already built into traditional cost of capital measurements such as the CAPM. While real options theory is a useful approach to evaluate investment alternatives, it simply has no application here. Pelcovits Reply Decl. at 16.

Specifically, the existence of the UNE regime does not change the options faced by the ILEC. In constructing their network, the ILECs have no realistic option to invest later, and given the scale and other economies present, the cost of making the investment to serve the entire level of demand is low. And the presence of CLEC customers does not significantly alter the uncertainty the ILECs face as a result of options available to the ILEC retail customers, who may buy one line or two, or any of a range of business service offerings. *Id.* at 17-20. The cost of capital the ILECs already face, in other words, already incorporates whatever additional costs the ILECs' face as a result of their customers' options. *Id.* at 16. Given the absence of any measurable real options effect, it is perhaps not surprising that the ILEC's expert's effort to identify one produces a formula that does nothing more than secure the ILECs the right to recover sunk costs, for reasons having nothing at all to do with "options value" theory. *Id.* at 20-28.

But even if cost of capital were determined on the basis of hypothetical risks that an entrant would face in a world of vigorous facilities-based competition, it would not follow that



cost of capital will rise so dramatically as the ILECs insist. Essentially, the relevant question is what kind of capital structure would be used to finance infrastructural network development. As well as identifying the appropriate proxy group for assessing the risks faced in competitive markets, a process that must take into account the fact that telecommunications are an essential utility, rather than a pure commodity such as soft drinks, it is critical to make sure that the cost-*minimizing* effects of a competitive markets are accounted for in setting the cost of capital. And it is on this point that the ILECs' proposals are most extravagantly misdirected. In particular, the ILECs argue that capital structure should be based on the market-based capital structure of the relevant proxy companies and propose equity-debt ratios at or around 80-20%. But in competitive markets, this capital structure would be far too costly, and, in any case, these capital structures are largely the product of the unsustainable and overheated stock markets of recent years. Rather, since competition would force carriers to minimize their costs, and because equity is more costly than debt, in financing network development in a competitive market, carriers would rely more on debt, utilizing capital structures closer to the book value of the proxy companies. For the ILEC holding companies, which do function in a competitive market, that capital structure typically exhibits a 50-60% reliance on equity, which would lead to much more conservative cost of capital inputs in UNE pricing inquiries than are proposed by the ILECs. *See* Kahal Decl. at 2-4, 11-12.

**B. Depreciation**

There is general agreement among commenters that depreciation expense should accurately reflect economic lives; which should not be set artificially to achieve a particular set of results. BellSouth Comments at 43. The ILECs nonetheless advocate adoption of so-called GAAP lives, even though they do not dispute the empirical evidence that has shown that these

lives – and indeed even FCC lives – have been too short, thus leading to excessive depreciation expense. Their entire argument in favor of GAAP lives is the unsupportable claim that dramatic technological changes now on the horizon render FCC lives too long and GAAP lives appropriate. The ILECs have been making such claims for years, however, and they have always proved wrong. They have never been able to support their GAAP lives with empirical evidence.

Virtually every time regulators have examined the actual evidence demonstrating how long ILECs use equipment, they have found that economic lives actually experienced are longer than those the ILECs have projected. Regulators, including the FCC, have therefore set lives based on their own unbiased economic life analyses incorporating statistical analysis of past lives and projections of expected technological change.

BellSouth suggests that actual retirement experience has “little relevance” for assessing forward-looking lives. BellSouth Comments at 37. That is absurd. The “process of combining statistical analysis of historical information with forecasts of equipment generates forward-looking projected lives that are reasonable estimates of economic lives.” *Tenth Report & Order on Universal Service* ¶ 426 (cited in *1999 Update*, ¶ 61 n.167). If nothing else, lives indicated by actual retirement experience provide a benchmark against which to judge the reasonableness, direction and cost magnitude of current economic life estimates. It is also highly ironic that the ILECs argue against any reliance on empirical evidence in estimating forward-looking lives, even though the empirical evidence is drawn from their own books and records, and argue instead for reliance on ILECs’ experts’ hypothesis that the future is likely to involve massive unexpected technological change. As we noted previously, the ILECs prefer “real world” evidence only when it suits their purposes.

The fact is that absent a revolution in technology, actual retirement experience is the most reliable basis for predicting economic lives. And for much of the telephone network, there is no significant expectation of revolutionary technological change. The ILEC projections of such change have time and again been proven to be biased downward and erroneous, and it is well recognized that, for the most part, the new technologies on the horizon will supplement, not replace, current technology. Moreover, if the ILECs were right that we are in the midst of such a revolution (in the change, for example, to fiber distribution facilities), a forward-looking network would then use the new technology and the relevant economic lives would be those of the new technology. But the ILECs want CLECs both to pay to replicate their existing technological mix (based on their claim that no real world carrier instantaneously replaces its equipment) and then pay to depreciate legacy equipment based on an expectation that the equipment will not last long. The result is artificially high charges. No “real” carrier would do this, and such a model relies on mutually inconsistent assumptions. The ILECs did not face the cost of deploying copper loops with very short economic lives when they deployed the copper; nor do they face such a cost on a forward-looking basis. So much for the ILECs’ fidelity to the real world.

Equally important, to the extent that technological change is expected, the FCC already took that into account in prescribing FCC lives. Although BellSouth claims that FCC lives were based “on little more than statistical analysis of prior prescribed lives,” BellSouth Comments at 42, that is not correct; nor is BellSouth’s additional claim that FCC lives were artificially lengthened beyond true economic lives so that investment would be recovered over a longer period of time. BellSouth Comments at 41. As the FCC concluded, its lives capture projected

effects of technological changes and thus “represent the best forward-looking estimates of depreciation lives and net salvage percentages.”<sup>24</sup>

The FCC’s projections have in fact been borne out, while the ILECs’ GAAP projections have not. The ILECs erroneously claim that when the FCC initially projected economic lives prior to the 1996 Act, it could not have taken account of recent technological change that has come about since the Act. But the FCC lives have adequately captured such changes, which is why the ILECs provide no evidence that they have begun retiring plant more rapidly than would have been predicted based on the FCC lives. *See* Gabel/Loube Decl. ¶ 111 (ILECs have failed to show the states that there has been any changes in their retirement practices as a result of the ostensible shortening of economic lives). Indeed, as was true in the Virginia Arbitration, while the ILECs assert “that technological advances and increased competition justify the use of shorter lives, [they] provide[] no specific evidence to support [their] position.” *VA Arb. Order* ¶ 115.

In fact, MCI, NASUCA, and AT&T showed that changes in reserve levels, the relationship of market value to book value, retirement rates, and current life indications for the BOCs’ major accounts all show that the FCC lives are, if anything, too short. Majoros Decl. at 14-21; Gabel/Loube Decl. ¶¶ 104-105; Lee Decl. ¶¶ 15-28. The ILECs present *no* evidence of their own suggesting otherwise, but merely quibble with the relevance of some of the types of evidence on which CLECs and NASUCA rely. While not disputing the empirical evidence showing that depreciation reserves have increased, for example, Verizon suggests that one

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<sup>24</sup> *1999 Update* ¶ 61; *see also 1999 Update* ¶ 5 (“In 1980, the Commission departed from its previous practice of relying largely on historical experience to project equipment lives and began to rely on analysis of company plans, technological developments, and other future-oriented studies.”); *1995 Prescription Simplification Order* ¶ 11 (FCC lives are based on company plans, technological developments and other future oriented studies).

possible explanation for the increase would be that “the average age of the assets increases.”

Lacey Decl. ¶ 40. But if the average age of the plant is increasing, that simply demonstrates that economic lives have not been as short as the FCC projected. The FCC’s projection lives have, for over 20 years, anticipated a substantial increase in retirements. An increase in the average age of plant, if it has occurred, would only underscore that such an increase in retirements has not materialized, and thus that the FCC lives are too short. Verizon also suggests that the depreciation reserve might grow if a company adds “new assets that have a shorter life than the older assets that are in place and continuing to be depreciated.” Lacey Decl. ¶ 40. But Verizon provides no evidence this is actually happening, much less at a sufficient magnitude to explain the dramatic increase in the reserve levels. The same is true with respect to BellSouth’s hypothesis that depreciation reserves might be increasing to accommodate retirements due to technological obsolescence (BellSouth Comments at 37-38). BellSouth cites to its so-called avalanche of retirements. But the avalanche, upon which BellSouth’s prognostications are based, has not occurred and has continually and consistently been moved forward in time. BellSouth is unable to provide any reasonable evidence that such an avalanche will ever occur. In the absence of such evidence, the increase in depreciation reserves strongly supports the conclusion that FCC lives are not too long.

Evidence of actual retirement also shows that FCC lives are not too long. BellSouth questions the relevance of historical retirement patterns, asserting that “every displacement does not result in a booked retirement.” BellSouth Comments at 37-38. BellSouth gives the example of an 1800-pair cable that has not been retired even though all but 100 pairs have been transferred to fiber. *Id.* at 38 n.31. This is a mere quibble, however. BellSouth makes no effort to show such scenarios remotely explain the vast discrepancy between GAAP lives and actual

retirement experience. Moreover, the GMT study MCI presented, Majoros Decl. at 19-21, demonstrates that lives are long and getting longer, regardless of BellSouth allegations.

Because FCC lives have been far more accurate than GAAP lives to date, the ILECs are left to suggest that unexpected technological change will in the future result in dramatic changes in economic lives. (BellSouth Comments at 35-36). But much of the evidence they point to concerns technological change that has already occurred, *id.*, and that has been adequately captured by the FCC lives, as the empirical evidence shows. The ILECs also cite predictions of dramatic change by Technologies Futures, Inc. (TFI), such as a prediction that even copper distribution facilities will not be the technology of choice in five years, SBC Comments at 52-53. But these are the same sort of Panglossian TFI predictions on which the ILECs have relied in the past and that have consistently proven vastly overstated. *See 1999 Update* ¶ 16 (“There is no evidence that the large wave of replacements forecast by TFI, which should result in increased retirements, has begun or is about to begin.”); Majoros Decl. at 23 (“TFI forecasts have been consistently revised upward”); *VA Arb. Order* ¶ 118 (“AT&T/WorldCom convincingly demonstrate that past TFI studies have been extremely aggressive in their projections, and that actual incumbent LEC retirements have proceeded at a much slower pace.”); Gabel/Loube Decl. ¶¶ 113-114 (past ILEC predictions of an avalanche of fiber deployment have been dramatically overstated).

SBC claims that cable, wireless, and VoIP competition will radically shorten asset lives. DSL is the response to these competing technologies, and as most experts in the field would agree, DSL will lengthen existing plant lives. Verizon states that the rate of technological change has increased in recent years. In fact, the rate of technological change has increased for about two decades. What has not increased are the ILECs’ retirements. In many cases, the

retirement rates have actually decreased. That is because many of the technological changes in telecommunications have supplemented rather than supplanted existing technologies.

In any event, if the ILECs can really show that dramatic change is now expected and will shorten economic lives, they should present this evidence as a basis for revising FCC lives or for departing from them. *See 1999 Update* ¶ 16 (“If the carriers do begin to retire plant more rapidly, our depreciation prescription process is flexible enough to allow them shorter lives and faster depreciation.”) They have not even attempted to do so. This failure again makes a mockery of ILEC claims that FCC lives are out of date. The FCC revised its lives in 1999 based on the one change the ILECs were able to demonstrate had occurred, and committed to do so again if the evidence warranted it. Although SBC derides the 1999 update as not “comprehensive,” SBC Comments at 51, in fact, the Commission evaluated the evidence and concluded that “except for digital switching equipment, recent carrier accounting data and trends do not support reductions in the prescribed projection life ranges. Specifically, with the exception of digital switching equipment, incumbent LEC retirement rates have either dropped or remained relatively constant in recent years. This certainly has contributed to the substantial increase in reserve levels that MCI-WorldCom cites.” *1999 Update* ¶ 14. As MCI and other parties have shown, the evidence since 1999 is no different. Majoros Decl. at 18.

In light of the empirical evidence that GAAP lives (and even FCC lives) are too short, the theoretical debate about whether GAAP has a built-in bias towards overly-short lives is a mere sideshow. In any case, GAAP does have such a bias, and, more importantly, GAAP allows for the similar bias of ILEC management to operate.

As MCI explained, GAAP lives are actually a misnomer. Majoros Decl. at 22-23. GAAP gives “substantial discretion” to management to project economic lives (*1999 Update*

¶ 48); thus, so-called GAAP lives are largely the lives chosen by ILEC management. BellSouth is wrong that Accounting Research Bulletin Number 43, Chapter 9 leaves little discretion in setting financial lives (BellSouth Comments at 40). As Verizon's witness explains, in applying GAAP principles, management looks at many different factors, including clearly subjective ones such as the anticipated level of competition and technological change in particular markets. Lacey Decl. ¶¶ 20-21. Only the ILECs would be bold enough to assert that the fact that GAAP principles require "relevant" and "reliable" information, Lacey Decl. ¶ 27, greatly cabins the discretion they otherwise would have to specify depreciation lives. Nor does benchmarking to the lives produced by TFI provide any assurance of accuracy, *id.* ¶ 22, as these lives have repeatedly been shown to be too short. *See supra.*

And ILEC management has every incentive to take advantage of the discretion afforded by GAAP by projecting short lives. Although SBC claims that management has no incentive to understate lives because doing so reduces profits (SBC Comments at 55), in fact in a regulated industry, management has a strong incentive to set these lives too short because doing so enables them to charge higher rates (a problem that would only be exacerbated if the Commission were to mandate use of GAAP lives in setting TELRIC rates). Majoros Decl. at 23. Contrary to the arguments of the ILECs (Verizon Comments at 63; Lacey Decl. ¶ 30), the market does not provide an adequate check on management's incentive to adopt overly short lives because the market is focused on EBITDA, not non-cash expenses, such as depreciation. Majoros Decl. at 24-25. As for Verizon's claim that shorter lives could be a concern for creditors (Verizon Comments at 65), this is clearly a gratuitous assertion. Creditors are the most conservative of all investors; from their perspective, the more depreciation the better since depreciation is a non-cash charge to earnings. Indeed, the ILECs' persistent advocacy of shorter lives in regulatory



proceedings over many years utterly belies their suggestion that any internal or external forces constrain their desire for shorter lives.

In addition, the conservatism principle used by auditors in reviewing GAAP lives also leads to the adoption of overly short lives. The ILECs make token efforts to repeat their shop-worn argument that the conservatism principle has been rejected. (Lacey Decl. ¶ 33). But the 1993 materials they cite are ones the Commission has twice determined are insufficient to prove their point. *Tenth Report & Order on Universal Service* ¶ 429; *1999 Update* ¶ 48. As AT&T explains, the Financial Accounting Standards Board itself found that the principle of conservatism remains “deeply ingrained” in practice, and the ILECs fail to show that this practice has now changed. AT&T Comments at 96-97 (quoting FASB, *Original Pronouncements*, Concepts Statements No. 2 ¶ 93). And what is even more apparent is that the results of the GAAP process have not changed – the evidence shows that the lives proposed by management and accepted by auditors remain far too short. As a result, it would be inappropriate for the FCC to mandate that states adopt so-called GAAP lives in calculating UNE rates; to the contrary, the FCC should make clear that the lives used in UNE cost studies must fall within the range of FCC lives. Moreover, as MCI showed previously, if the FCC were to move towards GAAP lives, it would also have to move towards GAAP principles of net salvage value, which would substantially increase the ILECs’ costs and would in fact be more accurate. Majoros Decl. at 25-26.

### **C. Structure Sharing**

The proper theoretical question in assessing structure sharing opportunities is how much structure sharing an efficient provider would engage in when constructing its network. This is the only way to make the proper long-run assumption that all inputs are variable. If the

Commission were instead to focus on ILEC structure costs given the existing structures that are already in place, logical consistency would then require it to consider only the ILECs' short-run incremental costs of structure, since the ILEC's embedded structure is also "already in place." When the ILECs put in new fiber on existing routes, for example, they generally run it through existing conduits or on existing telephone poles with very little cost from the structure even if it is not shared. These short-run costs are much smaller than the costs of the shared structure that are included in the TELRIC models today. AT&T Comments at 71; Willig Decl. ¶ 97.

The Commission should clarify that the proper long run approach is to focus on all sharing opportunities that would exist if telephone and utility networks were now all being built.<sup>25</sup> Even if the Commission does not adopt such an approach, it should direct states to focus on structure sharing opportunities that exist today. Indeed, the BOCs agree that the proper theoretical question in calculating structure sharing in a forward-looking network is the structure sharing opportunities that exist today. Thus, for example, Qwest claims that the FCC should reaffirm that structure sharing inputs "must be based on replacement of the network under conditions as they exist today." Qwest Comments at 34.

Nonetheless, Qwest (and some other ILECs) morph their theoretical understanding of the appropriateness and relevance of current structure sharing opportunities into the claim that the FCC should "establish a rebuttable presumption in favor of using the ILEC's actual structure sharing percentages in developed and undeveloped areas as the basis of calculating forward-

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<sup>25</sup> With respect to many inputs, the ILECs attempt to make hay of their claim that TELRIC is inconsistent, and that if a world of perfect competition were presumed, cost of capital would be higher, fill lower etc. As explained *supra*, the ILECs are wrong about what TELRIC presumes. But if a world of many new facilities-based competitors were presumed, structure sharing opportunities would, of course, increase dramatically, as each CLEC could potentially share not only with cable or power companies but also with all of the other facilities-based CLECs. Not surprisingly, however, the ILECs do not make this point.

looking costs.” Qwest Comments at 34; *see also* BellSouth Comments at 26 (“reformed TELRIC rules should recognize the appropriateness of the ILECs’ actual structure-sharing percentages.”) Qwest argues that the presumption should be subject to adjustment based only on actual marketplace evidence of the extent of structure sharing, if any, by other ILECs and/or CLECs. Qwest Comments at 34.

For two reasons, it would be entirely inaccurate to presume that the level of structure sharing in a forward-looking network is the same as the level the ILECs assert exist in their embedded networks for two reasons. First, there is no way accurately to assess the level of structure sharing opportunities that existed in the ILECs’ networks when facilities were deployed over a period of decades. Willig Decl. ¶ 94. Nor do the ILECs routinely track their level of structure sharing in particular accounting entries. Moreover, there is simply no way for CLECs to verify the level of structure sharing the ILECs claim exist. Although Verizon says that “[d]ata about the incumbent’s structure types and sharing is reflected in sources such as ARMIS and other company records,” (Verizon Comments at 46) there is in fact no ARMIS or other generally available data on the amount of structure sharing engaged in by the ILECs. While ARMIS does include some data on structure types – aerial, buried, and underground plant – it does not include any information on the amount of structure that the ILECs obtain from or provide to other users. Thus, any “company records” on structure sharing would be unverified and subject to control by the ILECs. Second, even if regulators could accurately assess the level of structure sharing in the ILECs’ embedded networks, that would not be an accurate basis of assessing the level that would exist in a new network that was efficiently constructed. The ILEC networks were constructed over a period of many years, and for much of that time the ILECs were not under price cap regulation and thus did not even have that incentive to act efficiently. (AT&T Comments at 10,

69-71). Moreover, as we have shown above, even price cap regulation has not ensured that ILECs will act efficiently.

In addition, the structure sharing opportunities today are different than the opportunities that existed when the ILECs created their networks. The ILECs at times argue the opportunities today are less. Qwest Comments at 33 (criticizing CLEC models for assuming structure sharing opportunities today are as high as when plant was constructed). In fact, they are greater because of new regulations ensuring that carriers lay fiber simultaneously, as AT&T shows, and also because there are often more carriers with whom structure sharing is possible (such as additional cable companies) than was possible when the networks were built. Riolo Decl. ¶¶ 81-107. Indeed, the state records show that structure sharing opportunities are great. As NASUCA explains, although the NPRM suggests that the structure sharing percentages adopted by some states are backward looking, and not reflective of real-world conditions, this is an incorrect characterization. The state records show that the state decisions reflect actual real-world sharing opportunities, often based on testimony from ILEC witnesses. Gabel/Loube Decl. ¶¶ 146-150.

In any case, the structure sharing opportunities that exist today are clearly different than those that existed in the various time periods when the ILECs constructed their networks, meaning that the embedded structure sharing percentages cannot be presumed to be accurate. The ILECs claim that structure sharing opportunities are few because of practical concerns like work coordination and space considerations (*e.g.*, BellSouth Comments at 26 (NERA Decl. at 37); Verizon Comments at 46-47) and because in most places where CLECs wish to lease loops, development was already completed. Qwest Comments at 33. But even where structure is in place, that structure can often be shared – the existing utility or cable company with conduit or telephone poles, for example, has every incentive to allow sharing to reduce its costs. That is

why, for example, there are almost never two sets of telephone poles in the ground; utilities run wires over the existing poles.<sup>26</sup> In any case, this is a question that is best decided in state proceedings, as has been done to date.<sup>27</sup>

At times, the ILECs suggest that structure sharing percentages, rather than being based on data on their embedded networks, should be based on recent ILEC projects in both developed and undeveloped neighborhoods. SBC Comments at 60; Qwest Comments at 34. But recent ILEC experience with particular projects installed piecemeal may not be reflective of structure sharing opportunities generally. First, there is no guarantee that the structure sharing achieved by any ILEC for a particular set of areas matches the sharing that would be achieved by an efficient competitor. Second, even if the achieved amount of sharing did reflect the amount an efficient competitor would achieve, there would still be no guarantee that the mix of areas in which sharing occurred in any particular time period would match the mix of types of areas that exist throughout the ILECs' territory. The TELRIC models used in the states rightly reflect the fact that sharing opportunities are different in areas with different customer density. For this reason, any data on sharing achieved would need to represent a mix of territories at all density levels to be useful.

Moreover, presumptions based on ILEC experience means that ILECs would have full control over the inputs, as only they know the "actual marketplace evidence." While CLECs

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<sup>26</sup> Thus, Verizon's claim that other carriers and utilities prefer leasing individual ducts from ILECs rather than sharing structure costs, Verizon Comments at 47, is not evidence that structure sharing does not occur, but rather shows how structure sharing is often implemented. Regardless of whether two carriers each agree to place half of the conduit over a given route, or one carrier builds it all and then leases half of the ducts in the conduit to the other carrier, both carriers should end up paying half the costs of the conduit over that route.

<sup>27</sup> Similarly, Verizon's assertion that in one particular project where structure sharing took place, Verizon Comments at 47, its costs actually went up, is the sort of claim that must be assessed in hearings that evaluate how much structure sharing a forward-looking carrier would pursue.

may have constructed some of their own facilities, they will not have done so in many of the areas in which structure sharing opportunities are being assessed and thus will not have access to the “actual marketplace evidence.” Nonetheless, it is perfectly reasonable for CLEC experts, with experience in network deployment during their time working for the ILECs, for example, to explain that the ILECs are inaccurately assessing the actual marketplace evidence and that real structure sharing opportunities are higher. *See, e.g.,* Gabel/Loube Decl. ¶ 40 (explaining that state of Washington determined structure sharing largely from depositions of field engineers). States can then decide what weight to give to the CLEC evidence, as compared with the ILEC evidence of their real “marketplace” experience. In the Virginia Arbitration, for example, the Bureau found Verizon’s claims about its recent experience unsupported by any evidence (VA *Arb. Order* ¶ 285); but only by carefully examining the record before it was it able to reach such a conclusion.

#### **D. Structure Mix**

The same arguments that apply to structure sharing also apply to claims regarding plant mix of aerial and underground cable. (Qwest Comments at 35-36; SBC Comments at 63) Qwest’s claim that it must increasingly rely on underground cable due to aesthetic objections to aerial cable, as well as other reasons, is just the sort of claim that should be adjudicated in state proceedings. There should not be any presumptions that the ILEC’s current cable mix is forward-looking or efficient, nor should there be a requirement that percentages be based on “marketplace evidence” in developed and undeveloped areas. The ILECs “marketplace experience” cannot be readily determined even by the ILECs, much less the CLECs. Although the ILECs report their ostensible structure mix in ARMIS, they do so for their whole service area, not at the level of disaggregation needed for TELRIC models. Moreover, it is not at all

clear how the ILECs determine these numbers; they likely are based on surveys with different methodologies for different ILECs and with the ILECs having every incentive to tilt the mix towards the most expensive structure. Any use of the ILECs' "actual" structure mixes therefore would require careful evaluation of the ILEC data with ILECs having all the advantages in evaluating the data. Moreover, the ILECs' actual marketplace experience in the past does not reflect the options available today, as Qwest's own comments suggest. Of course, the evidence ILECs present of their "actual" structure mix is relevant evidence, it just should not be deemed presumptively reflective of the mix in a forward-looking network.

#### **E. Fill Factors**

The ILECs generally propose that the Commission mandate reliance on their "actual" fill factors. *See, e.g.* BellSouth Comments at 27. To the contrary, the Commission should make clear that "actual" fill is not generally an accurate way to assess forward-looking cost for several reasons.

To begin with, it is important to note that the differences between the fill generated by TELRIC models and the "actual fill" the ILECs report in their networks is not nearly as great as the ILECs suggest. The fill input into TELRIC models is higher than in the ILECs networks because the models have not yet accounted for breakage. But the output of TELRIC models after accounting for breakage generally will not differ radically from the ILECs "actual fill." *See* Pelcovits Reply Decl. at 9 (describing fill in HAI model).<sup>28</sup>

To the extent the ILECs argument is that the output of a model must match their "actual fill," they are nonetheless incorrect. First, at an empirical level, there is no way to be sure of

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<sup>28</sup> If, however, the ILECs' "actual fill" were input into a TELRIC model, the result would be a fill vastly lower than that which the ILECs report exists in their network, and thus would be inappropriate even under the ILECs' reasoning.

“actual” fill. The ILECs do not report their actual fill in ARMIS but rather make assertions about actual fill based on special studies in which they have every incentive to understate their fill. Second, at a theoretical level, the “actual” fill factors reflect significant spare capacity that the ILECs build in on the assumption of future growth.<sup>29</sup> As Qwest explains, its practice “is to deploy sufficient distribution capacity at the time of initial installation so that it can fill orders for additional lines without having to dig new trenches each time.” Qwest Comments at 41.

Similarly, the ILECs build capacity to serve vacant premises. *Id.* The spare capacity built to account for growth cannot be included in assessing UNE costs unless the costs are spread over the projected demand this capacity is meant to serve. As AT&T explains, an efficient carrier will only build spare capacity to account for growth if this *decreases* costs per customer. AT&T Comments at 64. Because of the difficulties in assessing the amount of spare capacity an efficient carrier would build for future growth and the future demand that could be anticipated, however, it is preferable to calculate fill factors by assessing the spare capacity needed to serve present demand, as the Commission concluded in the universal service context and the Bureau properly concluded in the *Virginia Arbitration Order* ¶ 254.

Verizon’s argument that spare capacity for growth should be included in a cost model because fill levels will remain constant over time (Verizon Comments at 46) is an argument Verizon made in the Virginia Arbitration and that the Bureau implicitly rejected. *Va. Arb. Order*

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<sup>29</sup> Any comparison between the ILECs’ “actual” fill and the fill proposed by CLECs in cost models is severely misleading. The ILECs’ actual fill is based on all spare capacity in the network, including spare capacity caused by breakage. When the CLECs propose a particular fill as an input in a cost model, however, that is spare capacity before breakage; the model then directs placement of equipment with breakage leading to a much lower fill than that input in the model. If the ILECs’ actual fill were input in a cost model, it would result in fill much lower than the fill in the ILECs’ networks. *Cf. Va. Arb. Order* ¶ 248 (CLECs and Verizon use fill in different ways and one cannot be substituted for the other).



¶ 254. Fill factors have remained constant over time in the ILECs' networks because the ILECs are always putting in new plant to serve new customers; in the parts of the network that have already been installed, fill increases over time, as the ILECs themselves acknowledge. SBC Comments at 65. By relying on embedded fill, the ILECs' cost models establish sufficient spare capacity to serve this increased demand but then charge current ratepayers for the cost of both the used and unused capacity. If total demand increases (which is the expectation in building in the spare capacity), the models generate *more* revenue than needed to cover the full costs of the facility.

Verizon asserts that some of the spare capacity in the network is there to serve "current" demand, by which Verizon means demand that might suddenly materialize, such as a customer's demand for a second line. Verizon Comments at 45. But this is no different than any other form of growth. If a cost model includes the spare capacity used to provide second lines, it must also model the projected demand for those lines and spread the costs over the projected demand. In any case, both the Commission's Synthesis Model, and CLEC cost models, overstate costs by leaving in sufficient excess capacity to account for short-term growth. *See Tenth Report & Order on Universal Service Tenth Order* ¶¶ 201, 203; *VA Arb. Order* ¶ 247; Pelcovits Reply Decl. at 9.

In addition to spare capacity the ILECs have included for growth, the ILECs also have significant spare capacity to account for the substantial number of defective pairs in their network. Riolo Decl. ¶ 26. The high number of defective pairs exist because of the age and technology of the ILECs' plant. But in calculating costs in a forward-looking network, CLECs are required to pay the cost of new equipment. They must therefore obtain the benefit of this new equipment, which includes a much higher percentage of working pairs. Use of embedded

costs charges CLECs for both the cost of new plant and the costs stemming from a network with old plant.

Moreover, the ILECs' assertion that their "actual" fill is lower than it would otherwise be because of their obligation to serve as carriers of last resort (BellSouth Comments at 13; SBC Comments at 67-68), if correct, is actually a reason *not* to rely on actual fill. If the ILECs' fill is lower than that of an efficient carrier because of their COLR obligations, that is reason to compensate the ILECs through explicit universal service subsidies designed for just such a purpose. It is not a reason to build implicit subsidies into the cost of UNEs. *See Local Competition Order* ¶ 712 (permitting universal service costs to be included in cost of UNEs would violate mandate to make subsidies explicit). The fact that the ILECs' retail network is larger than it might otherwise be because of COLR obligations (if that is indeed the fact) simply should have no bearing on the appropriate size of a wholesale network built to meet all customer demand. In any case, the ILECs have never shown that fills higher than their embedded fills would preclude them from meeting their COLR obligations. *See, e.g., VA Arb. Order* ¶ 252. The TELRIC models are already placing plant to serve all customers. The ILECs' claim that even more plant needs to be built in the TELRIC models is simply an absurd argument that inefficient excess capacity should be reflected in an efficient least-cost network.

Indeed, actual fill does not reflect the fill that would exist in a network constructed efficiently at the time – much less today. As with structure sharing and other inputs, the ILECs' "actual fill" reflects the fill from many different parts of their network, constructed with different technologies, at different times. Much of that network was constructed when price caps were not in place, and the incentive for efficiency was small. Although SBC asserts that "any excess spare in the network from the pre-price-cap era would have been filled by demand growth over

the intervening period,” SBC Comments at 65, SBC provides absolutely no basis for this assertion. SBC’s own chart shows that price-cap regulation did not become dominant until nearly 1998. SBC Ex. A, Debra Aron & William Rogerson, *The Economics of UNE Pricing* at 40 (Dec. 16, 2003). Most of the ILECs’ outside plant was installed before then. Riolo Decl. ¶ 37. And, contrary to SBC’s claim, even price caps do not ensure efficiency (SBC Comments at 65). *See supra*. The fill in the ILECs’ networks reflects capacity built for growth that did not materialize, capacity for services, such as Centrex, that were designed to be (nearly) ubiquitously available even though only a portion of potential customers were expected to order the service, capacity for second lines that are in far less demand today, and capacity based on old technologies that would not be used in a forward-looking network. See AT&T Comments at 66-67. Reliance on actual fill in setting UNE rates would also give carriers a continued incentive to deploy too much spare capacity. AT&T Comments at 68.

Some of the ILECs suggest that the FCC should require states to rely on the ILECs’ engineering guidelines in assessing fill (USTA Comments at 11, Verizon Comments at 35). We agree that the engineering guidelines provide one piece of evidence of what is efficient today. Indeed, while the ILECs generally assert that CLEC cost models propose fills that are far too high, the Bureau found the fill factors proposed by AT&T and WorldCom in Virginia were supported “by the information in GTE’s engineering guidelines.” *VA Arb. Order* ¶ 254. But even the engineering guidelines are premised on the assumption that spare capacity must be built to account for significant growth – an assumption that may make sense in building a network but that only should be taken into account in assessing cost per line if the costs are spread over the new customers who are expected to materialize. Moreover, complete reliance on the engineering guidelines assumes the ILECs act efficiently today, which often they do not do. For example,

many of the ILECs still build sufficient capacity to provide second lines to each home even though demand for second lines has decreased dramatically.

Finally, the ILECs attempt to argue that because in their view TELRIC requires the regulator to assume a world of perfect competition among small carriers, fill should actually be much lower than exists in CLEC models. (BellSouth Comments at 27-29; Qwest Comments at 42). How this relates to the ILEC claims about “actual” fill is entirely unclear. More important, the ILEC claims stem from an incorrect premise. As we have explained above, TELRIC does not attempt to model the costs of a telecommunications competitor in a world in which no one enjoyed the benefits of the economies of scale and scope of the ILEC. It is precisely because efficiently incurred costs likely would be higher in such a world that the Act mandates unbundling. TELRIC thus attempts to model the ILEC’s efficiently incurred costs given the economies of scale and scope the ILEC enjoys. Additionally, there is no reason to believe that fill would necessarily be lower in a fully competitive environment (*VA Arb. Order* ¶ 249); in constructing the network, the carrier would simply have to take into account the number of customers it would be likely to have in such an environment.

#### **F. Switching**

With respect to the switching issues raised in the NPRM, there are generally three issues on which the ILECs have provided comments: technology mix; calculation of vendor discounts; and upgrade costs. One of the ILECs has also filed comments on the FCC’s questions regarding the rate structure for switching. The comments filed by the ILECs reveal a significant degree of inconsistency. All of the comments, however, contain discussions on switching issues that are relatively superficial and provide insufficient support on which to make detailed policy

recommendations. In contrast, MCI provided detailed support for its position on switching. *See* Ankum Decl..

Each of the issues is discussed in more detail below.

**1. Technology Mix Among Switch Vendors Must Be Forward Looking**

An evaluation of forward-looking costs requires determination of the switching technology an efficient entrant would employ today. Generally, for traditional circuit switching, the incumbent LECs purchase from three major vendors: Lucent, Nortel and Siemens. As MCI previously explained, in determining which of these vendors an efficient entrant would use, it is reasonable to start with the contracts the ILECs are entering today to determine which vendor provides the least expensive switches – a method that can be corroborated by examining the incumbent LEC's most recent new switch purchases or planned switch purchases.

Verizon advocates a method similar to that proposed by MCI, but SBC advocates a quite different method that would lead to very different results. (Qwest and BellSouth do not discuss this issue.) Verizon stresses that the technology mix should be based on what the incumbent is expected to purchase in the future. Specifically, the company notes:

The rules should make clear that rates for circuit switching should be based on the mix of switch technologies the incumbent actually expects to purchase going *forward* and must include all relevant costs, including the appropriate portion of fixed, shared and common costs. (emphasis added.)<sup>30</sup>

This is a reasonable method for circuit switching, unlike for other elements, as the mix of new circuit switches purchased is not constrained by the equipment existing in the ILECs' legacy networks.

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<sup>30</sup> Verizon Comments at v.

But Verizon's position contrasts with SBC's position that the mix of switches that is modelled should largely reflect those in the incumbent's embedded network.

SBC notes:<sup>31</sup>

[...] the appropriate inquiry is the technology mix *present* in the incumbent's network at the midpoint of the network planning period. (emphasis added.)

The difference between Verizon's forward-looking methodology and SBC's embedded one is not insignificant.

For example, SBC's method would result in inclusion of few Siemens switches in the cost model even though such switches often will be the most efficient option. Siemens has offered state-of-the-art switch technologies only since the mid-nineties. Before that time, the company did not offer the feature functionality that incumbent LECs were getting from Lucent and Nortel. As an SBC witness noted in a proceedings in Indiana: "*In SBC's opinion*, Siemens has had a *viable* product only during the *last 5* of the 17 years of our program."<sup>32</sup> (emphasis added.) This means that the incumbent's embedded base of switches is heavily weighted toward Lucent and Nortel. SBC's method would therefore include few Siemens switches, while a forward-looking method likely would include many such switches.

## **2. Switch Costs Must Include New Switches, Not Just Additions**

As with the selection of the switch technology mix, the ILECs provide inconsistent recommendations with respect to the calculation of the switch discounts. MCI's position is that it is reasonable to calculate switch discounts using the method adopted by the FCC's Wireline Competition Bureau in the Virginia Arbitration Order, which focused on the blend of

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<sup>31</sup> SBC Comments at 71.

<sup>32</sup> Reply Testimony of SBC witness Mr. Jarmon, pages 4 and 5, Indiana Utility Regulatory Commission Cause 40611-S1.

new/replacement and growth facilities purchased over the economic life of the switch. BellSouth appears to largely agree with that approach. Only Verizon proposes a clearly different method (although SBC may share Verizon's approach).

Verizon states that switching prices should be based on the prices "actually paid for switching equipment." Verizon Comments at 49. Similarly, SBC states that "[t]he Commission should make clear that the per line costs of switching should reflect the real world prices the incumbent expects to pay for switching equipment." SBC Comments at 71. Neither Verizon nor SBC clearly explain what they mean. They fail to provide sufficient detail for this Commission to make a public policy determination about their proposals. But to the extent it is possible to infer what they mean, their proposals must be rejected. By actually paid, Verizon appears to mean the price ILECs will pay for switching equipment in the next year or several years. Verizon Comments at 50 (pointing to 2001 budget).<sup>33</sup> Verizon acknowledges that this price would mean switches – and thus total switch investments – would be priced almost entirely at the price of upgrades and growth addition equipment, since Verizon asserts that ILECs today "replace" their switches primarily by purchasing upgrades and growth equipment.

Verizon's method is valid only as short-run incremental cost method that seeks to identify the average costs that Verizon may pay for switching facilities over an increment less than the facilities associated with total element demand. It is in no way reflective of the total investment in switching facilities that should be identified under a TELRIC method (or any total service long run incremental cost method). Because most of the incumbent's switches were

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<sup>33</sup> Similarly, in state proceedings, SBC has advocated calculating switch prices based on the prices that the incumbent will pay for switching over the contract period even if the incumbent purchases almost exclusively higher-cost growth facilities in this period. That is how SBC calculates switching costs through its Switching Investment Cost Analysis Tool ("SICAT"), which it has introduced in state TELRIC proceedings.

installed in the late nineteen eighties and nineteen nineties when digital switches replaced analog switches, and because growth in the network has recently been anemic, few new switches are presently being installed. As a result, Verizon (and probably SBC's) method would result in the incumbent's entire switch investment being valued predominantly at the very expensive growth prices even though Verizon did not build its network using such a high percentage of growth facilities and no rational carrier would do so. This method was rejected out of hand in the Virginia Arbitration ruling. At best it is a short-run incremental cost method that identifies for Verizon what it may be paying for switching over a pre-specified period – it in no way is a useful measure of what unbundled switching costs are on average in the long run under a reasonable interpretation of the TELRIC method.<sup>34</sup>

Verizon asserts that ILECs today presently replace switches by replacing individual components rather than the switch itself, Verizon Comments at 50, but in all instances, the incumbent started by installing a new switch, which a new entrant would as well. To the extent that over the economic life of the switch, an ILEC is likely to spend more on growth additions than on the initial switch, as Verizon appears to contend, the Wireline Competition Bureau's method would account for this. Moreover, the fact that ILECs today are primarily making additions rather than installing new switches hardly shows that is how they are replacing those switches – rather it shows that the economic life of those switches has not run out and that there has been insufficient growth in the network to require addition of new switches as opposed to growth additions in the brief window of time Verizon has chosen to measure.

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<sup>34</sup> This particular aspect of the SICAT model has been rejected by various state commissions that have had an opportunity to examine SBC's methodology, such as the Illinois, Wisconsin, Indiana, and Michigan commissions.



Verizon's claim that the new switch discount manufacturers offer today would not exist if a competitor built a network today is equally preposterous. Verizon suggests that the manufacturers only offer the discount because they know ILECs are going to purchase few new switches. Verizon Comments at 50-51. That is false as an empirical matter. The manufacturers began offering the discounts when the ILECs were installing many new digital switches to replace the analog switches in their networks; that is, the discount structure came about in precisely the situation in which much of the network was being replaced in a relatively short timeframe. Ankum Decl. at 11 & n.5. And the manufacturers still offer those discounts today when carriers install new switches. Verizon's claim is also false as a matter of economic theory. MCI has previously shown that there is every reason to believe that even the price for the new switch (with the discount) covers the manufacturers' costs, and that the difference between the price of new switches and upgrades is explained by economies of scale. Ankum Decl. at 10-14. But even if the new switch price did not cover the manufacturers' costs, the price of the new switch plus the price of additions expected over the life of the switch (both of which are priced under the method set forth in the Virginia Arbitration Order) clearly cover the manufacturers' costs. Otherwise, the manufacturers would not offer the discounts. Indeed, the fact that they offer the discount suggests they *want* to induce competitors to purchase new switches (perhaps because of the economies of scale in making these switches). There is thus absolutely no basis for Verizon's assertion that manufacturers would not offer new switch discounts if a new entrant wished to install many new switches.

The paucity of support for Verizon's claims is evident from the fact that even BellSouth disagrees with this method. BellSouth recommends a method that appears to resemble in some

respects the FCC Wirelines Competition Bureau's method adopted in the Virginia Arbitration Order. Specifically, it notes:<sup>35</sup>

The TELRIC methodology should distinguish between those components of a switch that will be purchased only in a new/replacement situation and those components that can be purchased in either new or growth situations. ... [the] melded discount should be reflective of the distribution of new and growth purchases.

BellSouth's method appears to recommend that the melded discount is calculated considering the purchases of all switch facilities in the incumbent's network. BellSouth does not provide the details of its proposed method, so it is impossible to evaluate whether it too has deficiencies, but the critical point is that BellSouth appears to understand that switching cannot be priced by focusing predominantly on the expensive growth additions.

### **3. Switch Upgrade Costs Should Be Excluded**

Some of the ILECs argue that in addition to recovering the cost of new switches and growth additions, they should be able to recover the cost of technological upgrades for those switches. *See, e.g.*, SBC Comments at 72-73. But they do not even attempt to justify charging for these upgrades. This issue was discussed at length in the Declaration of Dr. Ankum on behalf of MCI, Ankum Decl at 20-23. As discussed in Dr. Ankum's Affidavit, the upgrades the ILECs previously made are historically incurred costs that are not forward-looking. Further, they are typically upgrades for older types of switches that are not state-of-the-art and are therefore not priced in a TELRIC model. A TELRIC model prices the functionality that the incumbents purchased through upgrades by requiring CLECs to pay for new switches that typically would include the functionality of the upgrades. Thus, if the incumbents are permitted

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<sup>35</sup> BellSouth Comments at 28.

to charge both for the upgrades and for state-of-the-art switches, there would in fact be a double recovery of costs.

The proposed ILEC charges for past upgrades fare no better as a proxy for charges for possible future upgrades an efficient entrant would incur over the life of the switch as it do adapted to new technology. TELRIC properly does not base prices on possible future technological changes that may cause network changes that either increase or decrease costs. Such changes are speculative and too difficult to price out. If the ILECs want to charge for future upgrades, however, that might be installed as a result of technological change, then it should equally be permissible for CLECs to point to declining switch prices, for example, as a basis for arguing that ILEC switching costs should be lower. Either all speculations about future changes should be prohibited or they should be permitted across the board with respect to all aspects of the switching studies.

#### **4. Switching Rate Structure Should Be Flat-Rated.**

Only Verizon takes issue with the proposition that switching charges should be flat-rated, as MCI established in our opening comments. *See* Verizon Comments at 53-55. Verizon argues to the contrary that they should be usage-based. The premise of each of its arguments is that its switching costs are usage-based, making it unfair to allow CLECs to target high-usage customers using average switching costs. But Verizon offers no support for this premise, other than an assertion that switch processing resources are engineered based on usage. MCI explained at length why the premise is false. Ankum Decl. at 29-33. In particular, the ILECs' contracts show that they purchase switching components on a flat-rated basis. Their costs are therefore simply not usage sensitive regardless of how the switches are engineered. Given that the marginal cost to the ILECs of higher switch usage is zero, requiring the CLECs to pay on a usage basis puts

them at an illegitimate disadvantage in attempting to serve high-usage customers. They would, for example, be at a significant disadvantage in offering calling plans in which rates are not usage dependent. *Id.* at 35-36.

**G. Non-recurring Costs**

**1. The Presumption That NRCs Are Based on Efficient Operations Is Unwarranted**

The ILECs argue that the non-recurring charges should allow them to recover their “actual” costs by which they seem to mean the costs of particular activities in their network today. SBC Comments at 79, Verizon Comments at 76. They ignore, however, that an accurate determination of the total costs an ILEC incurs in providing service – including recurring costs in addition to NRCs – requires a consistent modeling approach. Ankum Decl. at 44. Assuming that the FCC continues to support recurring cost models based on the most efficient technology, it must also support modeling NRCs based on those that would exist if the new technology were deployed. If, for example, an efficient entrant would deploy a particular technology because it results in reduced maintenance costs even though its up-front costs are higher, the ILECs UNE rates cannot be priced to incorporate both the higher up-front costs of the new technology *and* the higher NRCs that would result if the network employed old technology. The Wireline Competition Bureau properly recognized this in the Virginia Arbitration Order, explaining that use of differing network assumptions “almost certainly would result in over-recovery or under-recovery of costs.” *Va. Arb. Order* ¶ 568. Professor Kahn agrees as well. He explains that “If the competitive norm is conceived to be the average total cost of a new plant using new technology, it is the operating cost of *that* plant that would have to be incorporated into the cost of service,” and it would “be anomalous” to consider instead “operating expenses actually incurred

in some test year in the plant that actually did the producing.” I Kahn, *The Economics of Regulation* 113.

Nonetheless, the ILECs continue to advocate calculating costs for NRCs using modeling assumptions different than those they propose for recurring costs. They propose calculating NRCs based on the technology that exists in their network today even though all of the ILECs make some sort of “forward-looking” adjustment to calculate recurring costs based on technology that will be in their network at some point in the future.<sup>36</sup> In addition, even if the ILECs proposed consistent models in which recurring costs, as well as NRCs, were based on the costs they incur today, such a model would suffer from the same flaws for NRCs as for recurring costs. That is, the ILECs would have full control over the costing data with an incentive to inflate costs. While the ILECs claim the magnitude, length, and rates of their activities are measurable, in fact, such measurement is fraught with difficulties, as was apparent in the Virginia Arbitration. *See VA Arb. Order* ¶¶ 572-577. In addition, the ILECs likely choose to perform certain non-recurring activities in today’s network only because of the sunk costs they have incorporated in existing equipment, which makes it cheaper overall to proceed with particular high cost activities as that enables them to avoid replacing equipment.

Reliance on current ILEC activities is flawed for another reason as well. The ILECs act inefficiently even given the “constraints” of their existing networks. For example, as Dr. Ankum has explained, whatever the merit of the traditional arguments put forth by the incumbents about

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<sup>36</sup> SBC’s suggestion (SBC Comments at 80) that it is the CLECs that are being inconsistent as a TELRIC model cannot base some inputs on efficiencies of a hypothetical carrier’s network, while basing others (such as capital costs, depreciations, and scale economies) on an ILEC’s network today, misunderstands TELRIC, as we have explained above. TELRIC models the ILECs’ costs – which are best ascertained based on the cost of constructing an efficient network that has the ILECs’ scale and scope.

the presumed efficiency of their networks, these arguments simply do not apply with respect to the OSS. The incumbent's have little incentive to install efficient OSS that only serves to lower the cost to entry to their dependent competitors. To the contrary, the incumbent's have incentives to make those processes labor intensive and cumbersome (as they still are). The fact that some of the ILECs' OSS has been reviewed in state proceedings hardly means that the ILECs now act efficiently, as throughout those proceedings the ILECs successfully pushed for standards allowing significant amounts of unnecessary manual processing, for example, and the penalties for missing performance metrics remain small. As for the claim that the ILECs have incentives to become efficient because UNE rates will remain in place until the next rate case, this provides very little incentive for ILECs that know UNE rates will be set based on their existing practices, as they will know any efficiency gains will simply reduce the next set of UNE rates. It would be far more rational from the ILECs' standpoint to harm their competitors through use of inefficient OSS. Thus, only commissions set prices based on the assumption that efficient networks are in place will incumbents have a cost incentive to bring their actual operations in alignment with the efficient systems on which charges are based.

Further, the claim on the part of SBC that its OSS are efficient is further undermined by the testimony of its own cost witnesses. As discussed in the declaration of Dr. Ankum, SBC witnesses testified that in planning OSS enhancements/improvements, SBC considers only the private costs and benefits of SBC. Ankum Decl. at 47. The company explicitly does not take into account the costs and benefits of such enhancements/improvements to its CLEC customers – benefits it would consider in a competitive market, where such improvements would result in increased sales to SBC. Because SBC excludes in its analyses the benefits to SBC's customers (the CLECs), the dynamic that leads to optimal investments decision in competitive markets does

not exist. In short, the incumbent LECs OSS are demonstrably not efficient and there are no reasons to assume that ever will be without regulatory intervention.

Verizon's claim that wholesale provisioning activities either have been automated or, if they are not yet, are unlikely to be able to be automated is equally suspect. Verizon Comments at 80. For example, in its current hot cut proceedings in such states as New York, New Jersey, Rhode Island and Massachusetts in which Verizon is attempting to justify extremely high NRCs, Verizon has stated it is still experiencing fall-out rates on UNE-L orders that are excessively high (in the double digit ranges) even though most of the hot cuts concern simple basic UNE loops. An efficient entrant would have far lower fall out rates. As Dr. Ankum demonstrated, in competitive markets with operational systems that are significantly more complex, fall out is far lower. Ankum Decl. at 46.<sup>37</sup> Moreover, much of the fall out that remains in ILEC systems results from errors in their legacy databases that would not exist with new systems created from scratch; because TELRIC costs include the cost of new systems, CLECs should not simultaneously be charged as a result of errors in old systems.

## **2. The ILECs Suggest Recovering Far Too Many Costs as NRCs**

The ILECs argue that they ought to be able to recoup all of their costs upfront and that the NRCs do not pose a barrier-to-entry to efficient CLECs. SBC Comments at 84; Verizon Comments at 78 -81. First, some ILECs argue that they should be able to recover disconnect charges up front. Verizon Comments at 86-87. *But see* BellSouth Comments at 48 (stating that disconnect costs can be recovered at the time of disconnection) But disconnect costs simply do not come about – if they come about at all – until the end-user decides to discontinue service.

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<sup>37</sup> Verizon's hot cut filings in, for example, New York and Massachusetts, propose hot cut charges that are in the \$80 to \$140 range for basic UNE loops.

There is, therefore, no justification for permitting ILECs to charge for those costs upfront. To the extent, the ILECs are concerned about uncollectibles, they recover that cost through “uncollectibles” mark ups to their UNE prices. *See Va. Arb. Order* ¶ 598.

Second, and more fundamentally, some ILECs argue that all one-time costs should be recovered as NRCs. Verizon again argues that recovering one-time costs as recurring charges results in Verizon having to absorb the risk of uncollectibles. Verizon Comments at 81. But Verizon fails to observe that this issue is not specific to non-recurring activities associated with service activation. Indeed, the vast majority of the costs incurred by the incumbent are one time costs in some sense. This is true for installation of loops, switches, buildings and other network components. All of those represent upfront outlays. But Verizon does not charge the entire cost of the loop or switch to the first CLEC that uses the loop or switch in the first month of service, making clear that the question of how costs should be recovered is not, as Verizon appears to suggest, whether the costs are incurred on a non-recurring basis versus a recurring basis. Rather, the deciding criterion is whether one or more CLECs (and the incumbent itself) benefits from the activities associated with those costs. *See Va. Arb. Order* ¶ 584. With respect to loop facilities, this question receives an easy answer in that over the economic life of the loop, multiple entities (including the ILEC itself) will benefit from its presence. Thus, the costs are recovered on a recurring basis. Each carrier pays monthly charges that reflect the proportional benefit derived from the facility.

The same analysis should be performed, however, with respect to the activities the costs of which ILECs routinely categorize as non-recurring costs. For example, when a CLEC submits an order that falls out of the ILEC ordering systems for manual intervention as a result of an error in the ILEC’s database, the ILECs often attempt to recoup the costs of the clean up from



the CLEC that placed the order. But because the cleanup will help all CLECs, such costs would appropriately be recovered as recurring charges – if they are to be recovered at all. *See Va. Arb. Order* ¶ 592.<sup>38</sup> Similarly, many of the other costs that ILEC routinely include in their non-recurring charges, such the costs of establishing cross-connects, or testing, are in fact for activities that will benefit carriers other than the CLEC that happens to place the service order. For all the same reasons, these costs should not be recouped through non-recurring charges. If cost were correctly classified by the ILECs, then the NRCs could be significantly lower than they are today.

This is a critical issue, as NRCs form a substantial barrier to entry. Verizon's suggestion that they are ordinary up-front costs, Verizon Comments at 85, flies in the face of the actual experiences of CLECs and basic economics. Indeed, the FCC's national finding of impairment for circuit switching is predicated in part on the high cost of hot cuts, which are recovered as NRCs. While hot cuts are perhaps appropriately recovered as NRCs as they benefit only the CLEC for whom the hot cut is performed, the barrier to entry problem would only be exacerbated if many other costs were recovered as NRCs. If, for example, ILECs could impose the entire cost of OSS development on the first CLEC that used the OSS, no CLEC would ever enter as the OSS costs could not be recovered over the period in which a customer was likely to remain with the CLEC. To refer to these costs as "start-up" costs, as Verizon does (Verizon Comments at 85), is to misunderstand that these costs must be overcome with each and every customer no matter how long the CLEC will be in business. Moreover, when an entrant in a

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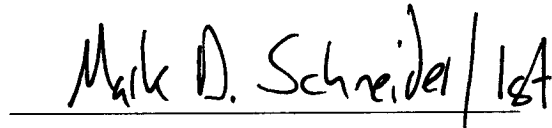
<sup>38</sup> In fact, under a proper interpretation of TELRIC, there should be no errors in the legacy databases but only those, if any, that would exist in efficiently created new databases. Either way, the costs associated with cleaning up the databases should never be recovered through non-recurring charges.

competitive industry incurs start-up costs, by for example, constructing a new facility, it owns the facility even if its initial customers leave and, if it chooses, can sell the facility to others. But Verizon wants the CLEC to pay one-time costs of network improvements that *Verizon* will “own” if the CLEC customer leaves and that Verizon will then benefit from. This is far different from the costs entrants bear in any other industry. Moreover, as Dr. Ankum explained, and as was apparent from the Virginia Arbitration, recovering costs largely through NRCs vastly complicates cost studies in attempting to ensure there is no double recovery of costs. Ankum Decl. at 58-61; *VA Arb. Order* ¶ 584.

### CONCLUSION

For the reasons stated above, the Commission should retain its existing TELRIC rules, except in those situations in which incremental cost rules send more appropriate economic signals and better promote competitive markets.

Respectfully submitted,

A handwritten signature in black ink that reads "Mark D. Schneider / lgt". The signature is written in a cursive, slightly slanted style. Below the signature is a horizontal line.

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